Analysis and overview of NQF level descriptors in European countries

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Luxembourg: Publications Office of the European Union, 2018

Please cite this publication as:
Cedefop (2018). *Analysis and overview of NQF level descriptors in European countries*. Luxembourg: Publications Office. Cedefop research paper; No 66.
http://data.europa.eu/doi/10.2801/566217

Luxembourg: Publications Office of the European Union, 2018

PDF ISBN 978-92-896-2668-2
ISSN 1831-5860
doi: 10.2801/566217
TI-BC-18-001-EN-N

EPUB ISBN 978-92-896-2669-9
ISSN 1831-5860
doi: 10.2801/067506
TI-BC-18-001-EN-E

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Foreword

During the past decade, national qualifications frameworks (NQFs) have been developed and implemented across Europe. Triggered by the adoption of the European qualifications framework (EQF) in 2008, these frameworks draw attention to the outcomes of education and training, focusing on what learners are expected to know, understand and are able to do.

Learning outcomes-based level descriptors are essential to these frameworks. While technical in their character, these descriptors not only help to define and map the (vertical) level of complexity of a particular qualification, they also help to clarify its (horizontal) orientation, be this on theoretical knowledge, practical skills and/or transversal competences. Level descriptors are thus important reference points, aiming to reinforce the learning outcomes orientation of education, training and qualification systems.

National level descriptors are outcomes of extensive dialogue and consultation between different stakeholders. While influenced by the EQF and its generic descriptors, national level descriptors have been adjusted and further developed to address national needs and priorities.

This publication provides an updated overview of NQF level descriptors of 39 countries participating in EQF implementation. It celebrates the 10th anniversary of the EQF process in 2018 and its contribution to transparency and comparability of European qualifications. It shows the progress made in this area and challenges ahead.

This is Cedefop‘s contribution to this first important milestone in the short history of the EQF. The progress achieved so far augurs well. Developments show that qualifications frameworks have served as catalysts for changes in education systems, in enhancing the image of vocational education and training (VET) and in bridging the divide between vocational education and training and higher education. Learners and workers, as well as employers, are the key beneficiaries of this process. In the long run, Europe’s education landscape will be enriched by qualifications frameworks that support access, mobility and permeability.

This publication is another example of how Cedefop is implementing its motto to ‘think European and act local’. Qualifications belong to people and citizens have a right to learning processes governed by quality, progression and employability.

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Acknowledgements

This publication was produced by Cedefop, Department for VET systems and institutions, under the supervision of Loukas Zahilas. It has been a team effort, with valuable contribution and input by individuals from different institutions:

(a) Cedefop experts Slava Pevec Grm, Jens Bjørnåvold and Andreea Rusu coordinated the work and wrote the report;

(b) the national representatives in the European qualifications framework advisory group, jointly coordinated by the European Commission and Cedefop, Directorate-General Employment, Social Affairs and Inclusion, EQF national coordination points and other national stakeholders.

Cedefop would like to thank the European Training Foundation for providing complementary information on national qualifications framework developments in European Union candidate countries.

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CHAPTER 1.

Introduction

Learning outcomes-based level descriptors are essential elements of the qualifications frameworks established across Europe and worldwide during the past two decades. While technical in character, the way level descriptors are conceptualised and designed may potentially influence education and training policies and practices.

Forming part of the learning outcomes-based qualifications frameworks (regional, national and sectoral), level descriptors are designed around two main dimensions. First, they introduce hierarchy of levels (the vertical dimension) which captures the increase in complexity, depth and breadth of learning outcomes. This hierarchy makes it easier for individuals to understand what is expected from somebody holding a qualification at a particular level. It also supports those designing and reviewing qualifications. Second, specifying domains of learning outcomes (the horizontal dimension) helps individuals, as well as education and training stakeholders, to distinguish between (for example) categories such as knowledge, skills, competence, social and personal competence, and autonomy and responsibility. This dimension is critical as it demonstrates that different types of qualifications with different purposes and profiles (general and vocational, practical and theoretical) can be delivered at all levels. Higher level qualifications, for example, can potentially be delivered by a wide range of institutions, including those with a vocational and professional orientation. The combination of learning outcomes-based levels and domains makes it possible to present education and training from a new angle, emphasising outcomes of learning and purpose and profile of qualifications rather than their institutional origin. The discussion on learning outcomes-based descriptors for qualifications frameworks cannot be treated as a purely technical issue. For level descriptors to play a credible and constructive role in education and training – and in relation to the labour market – their strengths and limitations need to be fully understood.

Responding to the challenge, the purpose of this report ([1]) is to show how European countries ([2]), mostly in response to the 2008 European qualifications

([1]) This publication is an update of the 2013 *Analysis and overview of NQF level descriptors in European countries* (Cedefop, 2013).

framework (EQF) recommendation (European Parliament and Council of the European Union, 2008), have defined their national level descriptors. The report is divided into seven chapters. Following the Introduction, Chapter 2 presents and discusses the different functions played by level descriptors. Chapter 3 outlines how level descriptors interact with learning outcomes applications at other levels and for other purposes. Chapter 4 presents the level descriptors of the EQF and clarifies their origin and orientation. Chapter 5 discusses the orientation of national level descriptors, including similarities and differences. Chapter 6 discusses remaining challenges in this area and how they can be addressed by research. Chapter 7 presents some concluding remarks.

([2]) These countries are: the 28 EU Member States, Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Iceland, Kosovo, Liechtenstein, Montenegro, Norway, Serbia, Switzerland and Turkey.

CHAPTER 2.

The main functions of level descriptors

The purpose of level descriptors is to indicate the location of a particular qualification. They help learners, education and training providers, and employers to position and value a specific qualification in relation to other qualifications; this also applies to those awarded in another education and training subsystem or country. Most European countries have designed level descriptors for a comprehensive national qualifications framework (NQF), covering all types and levels of qualifications. This allows the level descriptors to embrace a wide range of institutions, stakeholders and their interests, traditions, cultures and values. This directly influences the design of descriptors which need to respond to the following challenges:

(a) they need to be sufficiently general to accommodate different parts of education and training systems;
(b) they need to be sufficiently detailed and multifaceted to capture the institutional complexities, priorities and stakeholder interests of the national qualification system;
(c) they need to capture domains and subdomains of learning (horizontal dimension);
(d) they need to be able to reflect and capture how knowledge, skills and competences increase in breadth, depth and complexity when moving from lower to higher levels (vertical dimension);
(e) they need (increasingly) to act as a reference point for international comparison.

Depending on the character and objectives of different national approaches, descriptors address the following main functions:

(a) transparency and communication: introducing a comprehensive set of learning outcomes-based levels makes it possible to indicate how qualifications from different countries, subsystems and institutions compare and relate. Level descriptors are thus an important prerequisite for mapping an increasingly complex qualification landscape and help make it transparent. This mapping function is becoming ever more important as qualifications are awarded not only by national authorities, but also by private providers and international bodies;
(b) design and review of qualifications: level descriptors can be used as a reference point for designing new qualifications and for reviewing existing

ones. This is an important use of level descriptors as it can strengthen the consistency of programmes and allow qualifications at the same level to be delivered according to similar learning outcomes requirements. For instance, there is evidence that the learning outcomes approach of the national framework of qualifications in Ireland has improved the practice of course and curricula design. Some 74% of respondents who participated in the Irish NFQ impact study agree or strongly agree with this, while around 70% acknowledged that the learning outcomes approach of the NFQ has improved assessment practices (QQI, 2017, p. 22);

(c) quality assurance: level descriptors serve as a reference point for institutional comparison and development, for example by identifying differences in requirements and performance ([3]) between similar institutions (for example similar vocational programmes delivered by different providers), so helping improve qualifications quality ([4]);

(d) progression and bridging function: most comprehensive frameworks aim to support lifelong learning policies and practices and improve access to, and progress in, lifelong learning. Through their level descriptors they make it possible to identify how qualifications from different subsystems can be combined and support progression ([5]). Level descriptors also provide reference for validation of non-formal learning and make it possible to build on the learning taking place outside formal education, at work and during leisure time;

(e) recognition: NQF levels and level descriptors give important information about the level and overall orientation of a qualification and its link to other qualifications. This information aids recognition, supporting authorities and institutions to judge whether a qualification meets equivalence requirements.

The extent to which the national qualifications frameworks in Europe – and their level descriptors – are able to realise these functions and add value to policies and practices is increasingly being discussed in Europe and across the

([3]) Level descriptors can be used as a basic reference point for institutions working in the same sector of national education and training, highlighting inconsistencies in the delivery of knowledge, skills and competence.

([4]) 66% of respondents agreed or strongly agreed that qualifications included in the NFQ meet consistent quality standards wherever they are provided (QQI, 2017).

([5]) This could be exemplified by current developments regarding qualifications equivalent to level 5 of the EQF. Several countries, for example Estonia, Lithuania and Poland, have identified the need to introduce qualifications at level 5. It can be argued that the introduction of learning outcomes levels helps identify gaps in provision of qualifications.

globe ([6]). Evidence from some older frameworks, as for instance the Irish or Scottish variants, is promising (QQI, 2017; SCQF partnership, 2013).

([6]) See for instance Cedefop's peer learning conference 'Do national qualifications frameworks (NQFs) make a difference? Measuring and evaluating NQF impact' http://www.cedefop.europa.eu/ro/events-and-projects/events/peer-learning-conference

CHAPTER 3.

The alignment of level descriptors with other learning outcomes applications

Previous research (Cedefop, 2009; 2016) shows that most European countries see the orientation to learning outcomes as critical for modernising their education and training systems. Shifting the focus towards what learners are expected to know, be able to do and understand is also a prerequisite for dialogue between education and the labour market, and forms part of an effort to strengthen the relevance of education and training to the labour market. While level descriptors – as indicated above – play a key role in these developments, they cannot operate in isolation. The impact of level descriptors, and their ability to increase transparency, promote reform and support recognition, depends on the extent to which they interact (or align) with learning outcomes applications at different levels and for different purposes (Cedefop, 2017). The following sections address the use of learning outcomes for defining qualification standards, teaching and training curricula and assessment specifications, and how this is connected to the level descriptors.

3.1. Occupational standards

Occupational profiles or standards ([7]) are normally set outside the education and training system by labour market stakeholders but can have significant impact on the way learning outcomes statements are defined and written. Occupational profiles or standards specify the main jobs that people do, describing the professional tasks and activities as well as the competences typical of an occupation. Occupational standards signal what students must be able to do in employment and can ideally serve as a link between education and training and the needs of the labour market. While a qualification standard needs to look beyond the specific functions of a single job or occupation, occupational

([7]) As with qualifications standards, the term occupational standard is not used everywhere but refers to a function which can be identified in most countries. In some countries, for example Germany, the functions of qualifications and occupational standards are closely interwoven: in German VET, candidates will be awarded a qualification containing *Berufsbild* (occupational title), signalling a close relationship between occupation and qualification.

standards will often focus on a narrower set of tasks and functions ([8]). The relationship between level descriptors and occupational standards is currently weakly developed. However, level descriptors are increasingly providing inspiration to companies and sectors struggling to address future skills needs. International companies and sectors also partly see the added value of the qualifications frameworks for transparency purposes.

3.2. Qualification profiles and standards

Qualification standards ([9]) define the expected outcomes of the learning process, leading to the award of a full or partial qualification. In vocational education and training (VET), profiles or standards normally answer questions such as 'what does the student need to learn to be effective in employment and what does the learner need to learn to become an active citizen, supporting basic human and democratic values?' A qualification standard is not exclusively about promoting skills relevant to the labour market, but must address a broader set of competences relevant to life and society in general. It must also consider the changing nature of the labour market and society and clarify the role of transversal skills and competences, such as communication, social skill and problem solving. Many qualification standards or profiles are articulated at national level, reflecting input from various stakeholders (depending on the qualification type). The overall impact of an NQF, and its descriptors, depends on the extent to which they interact with and inform qualifications profiles and standards. A situation where profiles and standards are defined and developed without reference to level descriptors signals weak integration of the NQF into overall education and training policies and practices.

([8]) For a detailed discussion of alternative approaches see Erpenbeck and von Rosenstiel, 2003.

([9]) The term qualification standard is not used in all countries, though the function described in this chapter can be recognised in most. The term qualification standard, as used here, can refer to either stand-alone documents (as in the UK and Ireland) or to programme documents, at national or institutional level, indicating the overarching objectives for a qualification (e.g. a national *Fagplan* in the Norwegian vocational education and training system).

3.3. Curricula

Curricula set the framework for planning learning experiences. Depending on the country, the type of education and training, and the institution, learning outcomes statements form an important part of curricula. They guide teachers in the teaching process, for example supporting the choice of methods, and they inform learners about what they are expected to know/do and understand after a given learning activity. Learning outcomes in curricula can differ in detail; sometimes defining outcomes of an entire programme, sometimes focusing on specific outcomes of a module. Implementation of learning outcomes requires that the general statements and principles found in the level descriptors are reflected in curricula, guiding the teaching and learning processes. When level descriptors, for example, require that a learner is able to take '…responsibility for decision-making in unpredictable work or study contexts' (Council of the European Union, 2017, Annex 2: EQF level 6, responsibility and autonomy domain), this will need translation into the teaching and learning programme.

3.4. Assessment specification and/or standards

Assessment specifications identify the content, the methods and the criteria underpinning assessments. These criteria, using learning outcomes statements, are often formulated as threshold levels which have to be met by the candidate. They can also be defined for different grades. Assessment standards and the criteria they use are more detailed than qualifications standards and curricula, in the sense that they have to describe the requirements precisely to the learner and the assessor. These requirements normally support summative assessments at the end of the learning process, but can also orient formative assessments taking place throughout the learning process ([10]). Assessment standards play a critical role in deciding the orientation of the learning outcomes approach. Even more than for qualifications profiles and curricula, alignment between level descriptors and assessment criteria is of critical importance. If the level

([10]) The goal of summative assessment is to evaluate student learning at the end of an instruction unit by comparing it against some standard or benchmark. This contrasts with formative assessment, where the purpose is to monitor student learning to provide feedback that can be used by instructors to improve their teaching and by students to improve their learning. Formative assessment helps students identify their strengths and weaknesses and helps teachers and trainers support student progress. Learning outcomes should be written in ways which also support formative assessment.

descriptors, for example, require ‘a range of cognitive and practical skills … to generate solutions to specific problems in a field of work or study’ (Council of the European Union, 2017, Annex 2: EQF level 4, skills), this needs to be reflected in assessment methods and criteria. An assessment approach ignoring this and only asking learners to, for example, reproduce factual knowledge would be in conflict with the descriptors.

3.5. Alignment as a condition for impact

Level descriptors can be seen as the most generic and abstract articulation of learning outcomes. They can play an important role as tools for transparency and reform, though this potential cannot be released without closely linking these descriptors to learning outcomes applications at other levels and for other (but related) purposes. In some countries, there have been efforts to strengthen this alignment, using the level descriptors as a reference point for a planning process, and involving stakeholders at different levels. A key challenge lies in the alignment of level to actual teaching and assessment activities. Critical voices warn against this and fear that a more systematic implementation of learning outcomes will narrow the learning process and limit creativity and innovation on the ground. Others argue, contrary to this, that the level descriptors and their focus on a broad range of learning domains can help to open up the learning process and support active learning. This discussion is partly reflected in the national processes leading to the definition of level descriptors, as addressed in Chapter 5.

CHAPTER 4.

The level descriptors of the European qualifications framework

The descriptors defining the levels of the EQF were developed between 2003 and 2008 in an extensive process building on research ([11]) and widespread consultation; this involved experts and policy-makers from all countries in the process ([12]). This interaction between experts and policy-makers was important not only for ensuring conceptual and technical quality, but also for generating ownership and trust.

4.1. The issue of competence

Agreement on the descriptors related to knowledge and skills domains was reached at an early stage of the EQF development process. This partly reflects the existence of a well-established research base, exemplified by the work departing from Bloom and colleagues (Anderson et al., 2001) on taxonomies of learning (see Chapter 6 for an illustration of this impact).

Agreement on the (headline) of the third column, 'competence', was harder to reach. Several countries and stakeholders stated that competence should be used as an overarching category referring to the ability of individuals to apply knowledge and skills in a self-directed way at work and in life. Treating it as a subcategory would, it was claimed, send the wrong signal. This was countered by representatives of countries using competence as a separate category, focusing on aspects such as communication, teamwork, and problem solving. The compromise, reached in 2008, was to retain the headline competence but limit the descriptors themselves to autonomy and responsibility. In parallel, a general definition of competence, stressing the overarching character of the concept, was included. This compromise did not solve the incoherence thus introduced. Discussions on the character of competence continued in the years following adoption of the EQF, reflecting real differences in the way learning outcomes are

([11]) Cedefop, 2005.

([12]) See responses to the EQF consultation on: http://www.cedefop.europa.eu/en/news-and-press/news/commissions-consultation-european-qualifications-framework-eqf

perceived in different countries. The 2017 revision of the EQF recommendation provided the opportunity to address this problem in a way which respects these different national approaches. The headline of the third descriptor pillar was changed from competence to autonomy and responsibility.

The 2017 revision reflects a broad agreement on the usefulness of the autonomy and responsibility descriptors to distinguish the level and position of a qualification. Most NQF descriptors adopted since 2008 have built on this approach (although in many cases, as it will be clear below, extending it).

The basic structure of the EQF descriptors (2017) is shown in Table 1. This structure is the same as that used in the original 2008 version, the only change being the title of the third learning domain.

Table 1. **EQF level descriptors: main elements**

Level descriptor elements		
Knowledge	**Skills**	**Responsibility and autonomy**
In the context of EQF, knowledge is described as: • **theoretical** and/or • **factual**	In the context of EQF, skills are described as: • **cognitive** (involving the use of logical, intuitive and creative thinking) • **practical** (involving manual dexterity and the use of methods, materials, tools and instruments)	In the context of the EQF, **responsibility** and **autonomy** is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility.

Source: Council of the European Union, 2017.

CHAPTER 5.

National level descriptors: differentiation and convergence

NQF developments in most European countries were triggered by the EQF and so are influenced by the European level descriptors and levels. This might suggest a dilemma; while close alignment to the EQF descriptors may aid cross-border comparison, it may also reduce the ability to capture national specificities and complexities. The development of national level descriptors has largely taken place within this tension.

Sections 5.1 to 5.3 analyse how countries have approached this challenge. Only three European countries (Ireland, France and the United Kingdom), had developed NQFs prior to the EQF ([13]). This means that 36 countries have developed NQF level descriptors in response to the EQF.

Cedefop's analysis divides these countries into three different categories.

5.1. Close alignment to EQF descriptors

A first group of countries uses the EQF descriptors directly or aligns closely to them: Estonia, Austria, Portugal and Romania are examples ([14]). Most of these countries have, however, prepared additional explanatory tables or guides with more detailed descriptors to support consistent application across different parts of the education and training system and for different applications of learning outcomes (in line with the purposes outlined in Chapter 3). Estonia has prepared detailed level descriptors for four sub-frameworks:

(a) higher education;

(b) general education;

([13]) As shown in Annex 2, *Level descriptors in national qualifications frameworks*, these mature level descriptors vary considerably in form and detail and reflect the particular national policy context within which they emerged. The French level descriptors (divided according to five levels) differ considerably from the EQF approach, notably in that qualifications below level 3 of the EQF are not addressed. The Irish level descriptors have influenced the EQF level descriptors.

([14]) Estonia and Portugal use EQF level descriptors directly, but have renamed the third column 'competence': Estonia to 'scope of responsibility and autonomy activities' and Portugal to 'attitudes'.

(c) vocational education and training;
(d) occupational qualifications.

Portugal has drafted guidelines (*Understanding the NQF)* ([15]) in which a more detailed and fine-tuned description of knowledge, skills, attitudes and context is provided. In the case of knowledge, for example, a distinction is made between depth of knowledge ([16]) and understanding and critical thinking ([17]). The skills domain (also identified as know-how) is characterised by depth and breadth and purpose. The third column covers attitudes (defined as autonomy and responsibility). A context column has been added, defining context of application, predictability ([18]) and complexity. The frameworks of Greece, Croatia, and Slovakia are also closely aligned to the EQF descriptors, starting from the three main (European Parliament and Council of the European Union, 2008) pillars of knowledge, skills and competence and only introducing limited changes to the detailed descriptors. For instance, Croatia has emphasised social skills in addition to the cognitive and practical skills addressed by EQF.

5.2. Broadening the EQF descriptors

A second group of countries is influenced by the EQF descriptors, but has broadened and partly reoriented their descriptors: Bulgaria, Cyprus, Denmark, Finland, Hungary, Iceland, Latvia, Liechtenstein, Malta, the Netherlands, Norway, Poland, Sweden, Switzerland and Turkey are examples. All these countries use knowledge and skills as headlines for the first and second column of learning domains but have renamed and reoriented the third column to varying degrees.

For knowledge, many countries go beyond the dimensions of theoretical and/or factual knowledge introduced by the EQF and refer to ‘systematic knowledge’, ‘knowledge of a subject’ and ‘comprehensive knowledge related to knowledge domain or discipline’. In some countries the articulation of knowledge is closely linked to, and inspired by, the national curriculum and its emphasis on

([15]) *Understanding the NQF: users support guide*. A summary is included in the referencing report of the NQF to the EQF (Portuguese National Agency for Qualifications, 2011).

([16]) Considered to increase progressively from the lowest to the highest level.

([17]) Critical thinking is considered, at a lower level, to be interpretation of information and application in the context and, at the highest, critical awareness of knowledge-related issues in the field and at the interface with other fields.

([18]) Referring to the stability/changeability of situations. It is assumed that the more situations change, the bigger is the challenge faced by the individual.

progressive mastery of knowledge through the education process (Méhaut and Winch, 2012). The link to national curricula is also influenced by study subjects/fields, in some cases addressed as specific requirements in (for example) language, literacy and numeracy.

For skills, several countries seek to go beyond the focus on manual and cognitive skills introduced by the EQF and list 'planning, organising, social and communication skills', 'evaluation and judgment skills' as well as 'instrumental and systemic skills' as additional elements to be addressed. Denmark, for instance, has included 'communication, creative and problem-solving skills'. Hungary has broadened skills with 'learning skills', which are also emphasised in the Dutch, Polish or Norwegian descriptors. Latvia highlights 'ability to apply knowledge, communication and general skills'. Liechtenstein and Switzerland quote 'procedural and sensorimotor skills' and Turkey defines skills as 'utilisation of knowledge and problem solving'. The Netherlands includes 'applying knowledge, problem-solving skills, learning and development skills, information skills and communication skills'.

Most differences can be observed in the third column. For instance, the Netherlands and Serbia refer to 'responsibility and independence' Norway to 'general competence', Poland to 'social competence' and Latvia to 'analysis, synthesis and assessment'. While all these countries include autonomy and responsibility in their interpretation of competence, they tend to incorporate additional aspects such as 'critical thinking', 'creativity' and 'entrepreneurship, learning to learn, communication and cooperation'. A number of countries, for instance Finland, Iceland and Malta have made an effort to integrate the EU key competences (European Parliament and Council of the European Union, 2006) in their level descriptors. The inclusion of the term 'evaluation' in the Polish and Finnish frameworks underlines that individuals are expected to reflect critically on their own knowledge, skills and competence and on how these can be improved. In Latvia the terms analysis, synthesis and assessment point in the same direction. Poland uses the term 'social competence'. This is understood as identity (participation, responsibility, models of conduct), cooperation (including teamwork, leadership, and conditions) and responsibility (which include individual and team actions, consequences and evaluation). Ireland, having defined level descriptors prior to the EQF, uses four sub-strands to define competence: context, role, learning to learn and insight. Liechtenstein and Switzerland differentiate between professional and personal competences; the latter subdivided into autonomy, social competences and leadership competences. Turkey defines competence as 'taking responsibility and/or displaying autonomy, determination and satisfaction of learning requirements, taking into consideration

social and moral issues and responsibilities' (Turkish Ministry of Labour and Social Security 2015, p. 16).

These countries have all made an effort to broaden and enrich their national descriptors to be better able to mirror the complexities of their national qualifications systems and/or emphasise national priorities. This effort has partly blurred the relationship between the skills and competence categories. It is not obvious, based on the descriptors alone, how a problem-solving skill differs from a problem-solving competence. The context, as an independent category in national descriptors, is defined for example in the Flemish, Irish, Dutch and Portuguese NQFs.

5.3. Emphasising a comprehensive notion of competence

Interpretation of competence is particularly important for developing and agreeing on level descriptors. A third group of countries see competence as an overarching concept, significantly influencing the way learning outcomes are defined and described in level descriptors ([19]). This approach is exemplified by Belgium (Flemish, French and German communities), Germany, Hungary, Lithuania, Luxembourg, the Netherlands and Switzerland. These countries emphasise the holistic character of the term competence. According to this approach, knowledge, skills and attitudes are not atomised entities which can be judged in isolation from each other; individuals have to combine and apply them in the concrete contexts provided by work and learning. The ability of an individual to act in a self-directed way is seen as crucial to the understanding of competence and allows differentiation between competence levels (Méhaut and Winch, 2012). It focuses on the ability of a person to use knowledge, skills,

([19]) The distinction between the second and third groups of countries is not always clear-cut. Some countries, for example Cyprus or Slovenia, use competence as a headline for the third column, but emphasise the integrative and holistic nature of the concept. The Cypriot framework defines competence as 'space for action: the type of work or study related contexts in which knowledge and skills are brought into play, and the degree of unpredictability and changeability in these contexts' (Cypriot Ministry of Education and Culture, 2016, p. 95). Cooperation and responsibility are emphasised as important additional dimensions of competence. In the Slovenian qualifications framework, competence relates 'to the ability to use and integrate knowledge and skills in educational, work, personal and/or professional situations. Competences vary in their complexity, independence and responsibility for action' ((Institute of the Republic of Slovenia for vocational education and training, 2014, p. 12).

attitudes and other personal, social and/or methodological abilities – in a self-directed way – in work and study situations and to deal with complexity, unpredictability and change.

The practical implication of this perspective is well illustrated by the German qualifications framework, where the term *Handlungskomptenz* (action competence) is understood as 'the ability and readiness of the individual to use knowledge, skills and personal, social and methodological competences and conduct him or herself in a considered and individually and socially responsible manner' (AK DQR, 2011, p. 4). Consequently, the German level descriptors differentiate between professional and personal competence and show how knowledge (of varying depth and breadth), skills (instrumental and systematic, linked to judgement), social competence (communication, teamwork, leadership and involvement) and autonomy (autonomous responsibility, learning and reflectiveness) come together in defining the overall competence of the individual.

In the Netherlands the competence concept is also understood as integrative, aiming to cover a wide range of human abilities to cope with complex tasks. According to Westerhuis (2011, p. 76), '[the term] integrative stands for the fact that:

(a) competences are multidimensional;
(b) competent performance is only possible if all dimensions are addressed according to a set of standards.'

The Belgian-Flemish framework defines competence as 'the ability to apply knowledge, skills and attitudes when performing social activities, and integrate these into one's actions' (Flemish Government, 2009, p. 2). The Flemish descriptors introduce context as a separate aspect, emphasising that knowledge and skills have to be applied in life, work or study to count as competence.

The NQF in Luxembourg uses the term *competence* to underline the fact that learning outcomes are not an aim in themselves. Knowledge, aptitudes and attitudes are three important dimensions of developing competence by being applied actively in work or study contexts. The Hungarian framework is a four-pillar structure with explicit mention of attitude. Lithuania differentiates between three categories of competences: cognitive, functional and general (Laužackas et al., 2009).

Table 2. **Lithuanian descriptor principles**

Functional competences		
Skills	**Knowledge**	**Key skills and abilities**
Cognitive competences		
Knowledge	**Skills**	**Key skills and abilities**
General competences		
Key skills and abilities	**Knowledge**	**Skills**

Source: Laužackas et al., 2009; Lithuanian qualifications and VET development centre, 2012.

Level descriptors in Finnish and Icelandic qualifications frameworks are described in terms of learning outcomes in an integrated way as knowledge, skills and competences and their interrelationships.

5.4. Level descriptors bridging different education and training subsystems

The new generation of European NQFs overwhelmingly consists of comprehensive frameworks, addressing all types of qualifications at all levels of formal education and training. This means that they – through their descriptors – must be relevant to diverse institutions pursuing a wide variety of tasks in line with different traditions and cultures. According to Young and Allais (2009; 2011), one of the fundamental challenges comprehensive frameworks face is to take account of epistemological differences in knowledge and learning that exist in different parts of education. Countries have largely solved this by writing their descriptors in a general and neutral language, avoiding too specific references to particular sectors or institutional types.

A number of countries, for example Germany, have decided that this general/neutral approach is insufficient and have introduced alternative sets of formulations tailored to the needs of particular sectors and qualifications.

Box 1. **The German qualifications framework for lifelong learning (*Deutscher Qualifikationsrahmen*, DQR): alternative formulations for knowledge at DQR level 6**

Be in possession of broad and integrated knowledge including knowledge of basic scientific principles and the practical application of a scientific subject as well as a critical understanding of the most important theories and methods (corresponding to level 1 – bachelor level – of the qualifications framework for German higher education qualifications)

or

be in possession of broad and integrated occupational knowledge including current technical developments.

Be in possession of knowledge for the further development of a scientific subject

or

of a field of occupational activity.

Be in possession of relevant knowledge at interfaces to other areas.

Source: AK DQR, 2011 ([20]).

Other countries have moved one step further by introducing parallel level descriptors to distinguish between different categories of qualification. For instance, Austria and Liechtenstein have chosen to introduce parallel descriptors at levels 6 to 8 (the *Ypsilon* approach) respectively addressing qualifications from (academic) higher education and vocational education and training. Norway has chosen a similar approach at levels 4 to 6, also in this case capturing the differences between VET, general and academic qualifications.

The Polish qualifications framework offers yet another solution, introducing three main sets of level descriptors designed for different purposes and operating with different levels of detail:

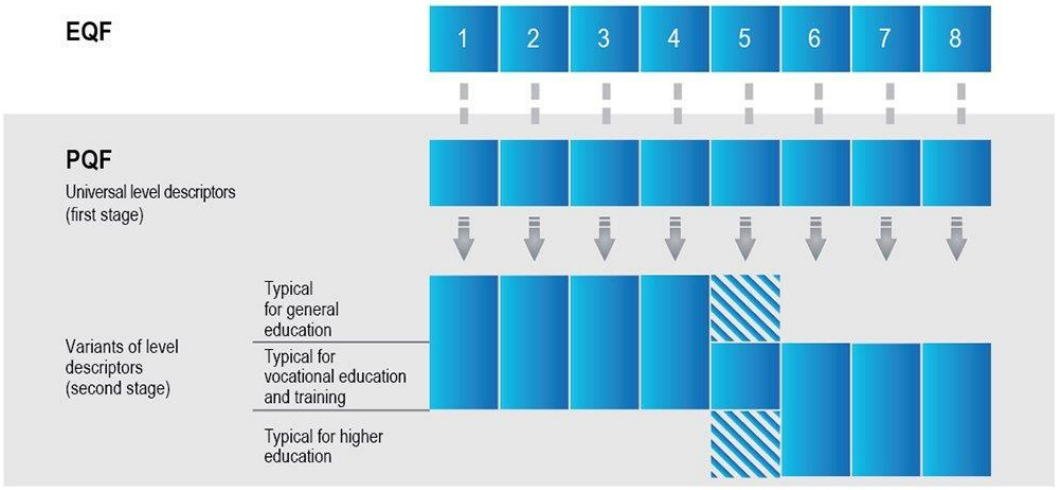
(a) Polish universal descriptors underpinning the Polish comprehensive national qualifications framework;

(b) Polish descriptors for education and training subsystems and sub-frameworks, notably for general education, vocational education and training and (academic) higher education;

(c) descriptors for economic sectors or subject areas.

([20]) The German qualifications framework for lifelong learning adopted by the German qualifications framework working group (AK DQR), 22.3.2011: https://www.dqr.de/media/content/The_German_Qualifications_Framework_for_Lifelong_Learning.pdf

Figure 1. **The structure of level descriptors in the PQF**



Source: Polish Educational Research Institute, 2017.

The universal descriptors (defined as knowledge, skills and social competence) have been agreed between stakeholders in general education, VET and higher education and represent a common reference point for developments at the other two levels, in subsystems and at sector/subject level. The basic distinction between knowledge, skills and social competence is used at all levels but differs in terms of specificity.

Progress has been made in defining level descriptors for the different education and training subsystems (Polish Educational Research Institute, 2017). For example, the main descriptive categories of the level descriptors for VET are specified as:

(a) knowledge:
    (i) theories/principles;
    (ii) phenomena and processes;
    (iii) organising work;
    (iv) tools and materials;
(b) skills:
    (i) information;
    (ii) organising work;
    (iii) tools and materials;
    (iv) learning and professional development;
(c) social competence:
    (i) following rules;
    (ii) cooperation;
    (iii) responsibility.

For general education (levels 1 to 4), the same three dimensions are grouped as follows:

(a) knowledge:
    (i) language and communication;
    (ii) mathematics and natural sciences;
    (iii) social functioning;
(b) skills:
    (i) language and communication;
    (ii) mathematics and natural sciences;
    (iii) social functioning;
    (iv) learning;
(c) social competence:
    (i) language and communication;
    (ii) health and the environment;
    (iii) social functioning.

Level descriptors for the third generic degree have yet to be developed. It is possible, however, to see the work of the tuning project as relevant for defining learning outcomes in particular subject areas of higher education.

5.5. Level descriptors and their relevance to the labour market

An important function of learning outcomes-based level descriptors is to increase the transparency of qualifications for labour market stakeholders. This requires that the level descriptors are able to make visible the learning outcomes that are relevant to occupations and work situations. They need to use language that can be understood by education and training as well as the labour market.

One of the EQF pilot projects ([21]) argues, however, that the EQF level descriptors suffer from several weaknesses, reducing their ability to act as a mirror of the world of work. Particular concern is expressed over the ability of the descriptors to differentiate between levels of competence, pointing to inconsistencies in the use of terms (such as how to express a degree of complexity, articulation of change and predictability/unpredictability, the role of context). The main conclusion from this project is that the competence must be further refined, particularly by addressing the character of actions (in relation to

([21]) DEKRA (*Deutscher Kraftfahrzeug-Ueberwachungsverein*, German Motor Vehicle Monitoring Association), 2012.

context, objects and others). Others ([22]) have supported this approach, arguing that descriptors must be further developed to capture better the scope of occupational activities covered by a qualification. This development could take place at sectoral and/or occupational level, acknowledging the complex nature of national and European labour markets.

The extent to which countries have responded to this criticism varies. The emphasis given to context and transversal skills and competences can be seen as one response to the concern; the Lithuanian introduction of activity-based descriptors another. The Lithuanian descriptors build on the following principles:

(a) characteristics of activities;
(b) autonomy of activities;
(c) variability of activities.

These activity characteristics underline that knowledge, skills and competence can only be fully understood when contextualised. As is seen in other national approaches, such as the Dutch and Belgian descriptors, the complexity of the context directly influences the competences required. In the Lithuanian approach, attention is also drawn to the influence of these activity factors on learning. Lack of autonomy and change at lower levels may reduce the potential for competence development. These descriptors are focusing on what is required to support lifelong learning and skills development ([23]). A good example of an occupational framework is the French NQF, where qualifications levels and level definition and indicators are linked to levels of occupation, work and pay (Allais, 2017). Scotland is an exception in this area, having developed and promoted a range of tools that support employers in using the Scottish credit and qualifications framework (SCQF) guides and level descriptors to support recruitment and staff selection, identify and plan skills development for staff, or gain recognition of in-house training programmes.

Arguments in favour of more employment-relevant descriptors show that level descriptors need to be systematically reviewed and further developed.

([22]) Méhaut and Winch, 2012.

([23]) Laužackas et al., 2009.

CHAPTER 6.

Methodological challenges and future tasks

The analysis of national level descriptors in Chapter 5 mainly focused on the horizontal dimension of the learning outcomes descriptors, mainly how different dimensions of learning are captured and expressed. However, for level descriptors to act as a credible reference point for transparency and reform, the interplay between the learning domains (the horizontal) dimensions and the levels (the vertical) is of crucial importance. In the coming period, and reflecting the experiences gained through the EQF referencing process ([24]), increased attention will have to be paid to the vertical dimension of these descriptors and their ability to distinguish between levels of qualification and degrees of complexity, depth and breadth characterising learning outcomes. This is closely linked to how progression in different learning domains has been captured within the learning domains discussed above.

6.1. The Southern African Development Community methodology

An effort to analyse the vertical dimension of level descriptors and unpack the interplay between vertical and horizontal dimensions was made by Keevy and colleagues (Keevy et al., 2017), in a report to the Southern African Development Community (SADC). To support revision of the existing level descriptors of the SADC regional qualifications framework, systematic comparison with other

([24]) 'Referencing is the process that results in the establishment of a relationship between the levels of national qualifications, usually defined in terms of a national qualifications framework, and the levels of the EQF. Through this process, national authorities responsible for qualifications systems, in cooperation with stakeholders responsible for developing and using qualifications, define the correspondence between the national qualifications system and the eight levels of the EQF' (European Commission, 2013, p. 3). National level descriptors play an important role in referencing/linking national levels to regional frameworks such as the EQF. Criterion No 2 of the Annex 3 of the EQF recommendation (2017) (European Commission, 2013) requires that there is a clear and demonstrable link between the qualifications levels in the national qualifications frameworks or systems and the level descriptors of the EQF. This link is established through the conceptual and linguistic comparison of national and EQF level descriptors. Horizontal and vertical dimensions play an important role.

framework level descriptors, including the EQF, has been carried out. The comparative methodology is an interesting first step towards a comparative methodological approach and is directly relevant to future developments of the EQF and related NQFs.

Box 2. **The SADC methodology**

Level descriptors are analysed, and subsequently compared, through the lens of progression within the three learning domains generally applied:

- the first (knowledge) domain, using the revised Blooms taxonomy (Anderson et al., 2001) and seen as having two dimensions: knowledge dimension (factual knowledge, conceptual knowledge, procedural knowledge and metacognitive knowledge) and cognitive process dimension (remember, understand, apply, analyse, evaluate, create);
- the second (skills) domain, using the structure of the observed learning outcome (SOLO) taxonomy ([25]);
- the third (competence, autonomy responsibility etc.) domain, using the Dreyfus model of skills acquisition (Dreyfus and Dreyfus, 1986).

A grid was developed for each domain (two for the knowledge domain) and a smooth line was fitted to each of the grids as depicted below.

Source: Keevy et al., 2017.

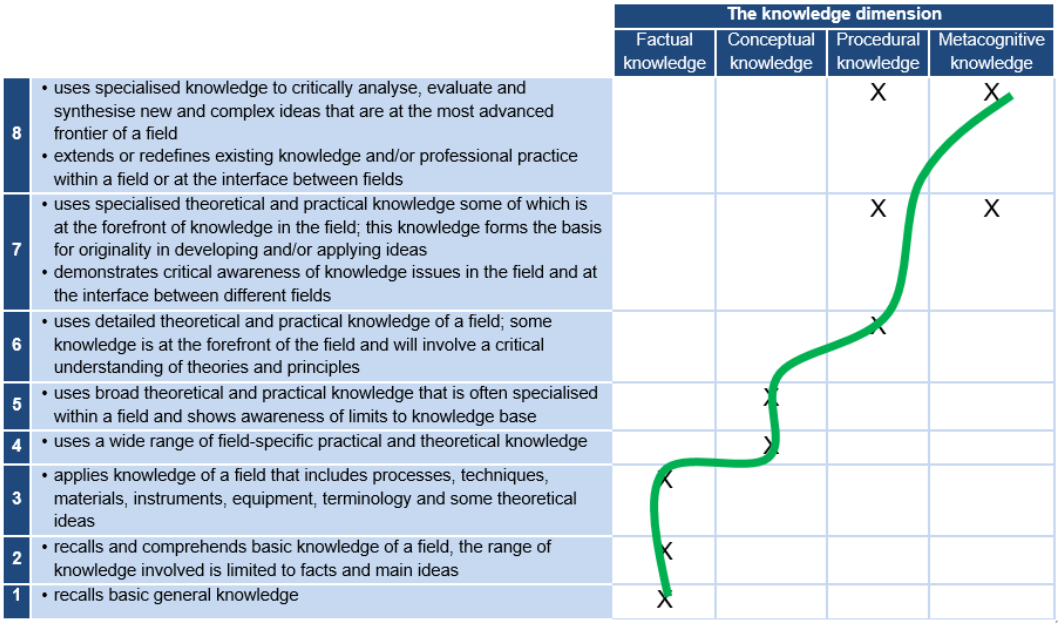
Sections 6.1.1 to 6.1.4 show how this methodology has been applied to the EQF.

6.1.1. EQF progression in the knowledge dimension and cognitive processes

Using Bloom's revised taxonomy (Anderson et. al., 2001) the graph illustrates how knowledge requirements increase in complexity from lowest to highest level.

([25]) www.johnbiggs.com.au

Figure 2. **EQF: knowledge domain: knowledge dimension**



		The knowledge dimension			
		Factual knowledge	Conceptual knowledge	Procedural knowledge	Metacognitive knowledge
8	• uses specialised knowledge to critically analyse, evaluate and synthesise new and complex ideas that are at the most advanced frontier of a field • extends or redefines existing knowledge and/or professional practice within a field or at the interface between fields			X	X
7	• uses specialised theoretical and practical knowledge some of which is at the forefront of knowledge in the field; this knowledge forms the basis for originality in developing and/or applying ideas • demonstrates critical awareness of knowledge issues in the field and at the interface between different fields			X	X
6	• uses detailed theoretical and practical knowledge of a field; some knowledge is at the forefront of the field and will involve a critical understanding of theories and principles			X	
5	• uses broad theoretical and practical knowledge that is often specialised within a field and shows awareness of limits to knowledge base		X		
4	• uses a wide range of field-specific practical and theoretical knowledge		X		
3	• applies knowledge of a field that includes processes, techniques, materials, instruments, equipment, terminology and some theoretical ideas	X			
2	• recalls and comprehends basic knowledge of a field, the range of knowledge involved is limited to facts and main ideas	X			
1	• recalls basic general knowledge	X			

NB: Factual knowledge: the basic elements students must know to be acquainted with a discipline or solve problems in it.

Conceptual knowledge: the interrelationships of the basic elements within a larger structure that enable them to function together.

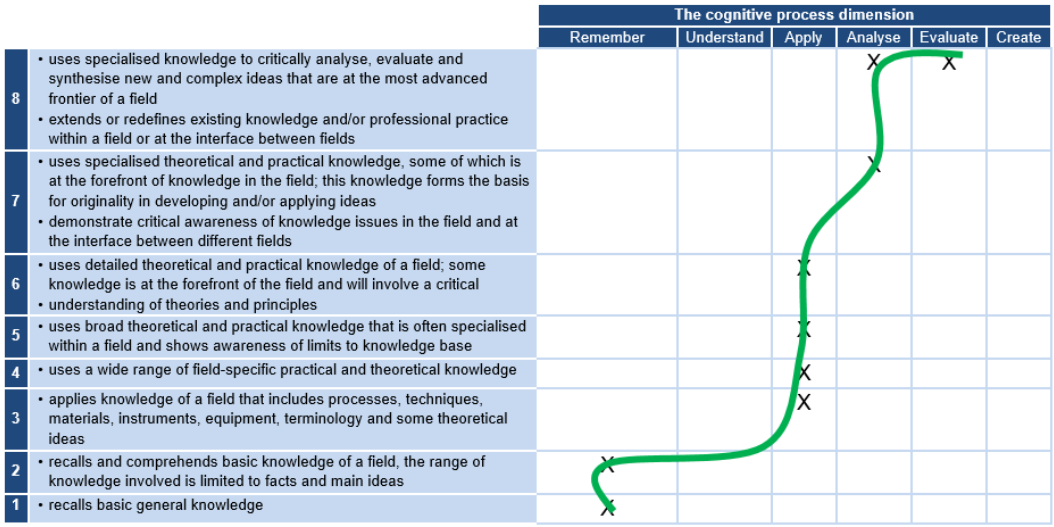
Procedural knowledge: how to do something, methods of enquiry, and criteria for using skills, algorithms, techniques, and methods.

Metacognitive knowledge: knowledge of cognition in general as well as awareness of one's own cognition.

Source: Keevy et al., 2017, p. 41.

While the overall progression is well captured, the lack of distinction between levels 1 to 3 and between levels 4 to 5 may be seen as a problem.

Figure 3. **EQF: knowledge domain: cognitive dimension**



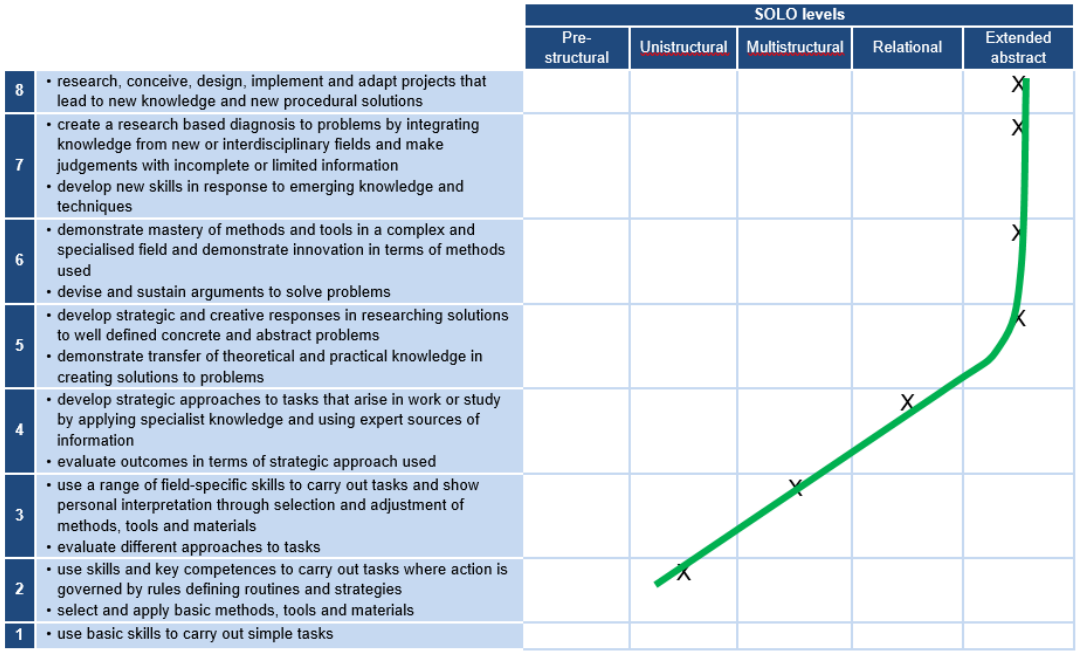
NB: Remembering: retrieving, recognising, and recalling relevant knowledge from long-term memory.
Understanding: constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarising, inferring, comparing, and explaining.
Applying: carrying out or using a procedure through executing, or implementing.
Analysing: breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organising, and attributing.
Evaluating: making judgments based on criteria and standards through checking and critiquing.
Creating: putting elements together to form a coherent or functional whole; reorganising elements into a new pattern or structure through generating, planning, or producing.

Source: Keevy et al., 2017, p. 36.

6.1.2. Progression in skills

Departing from the SOLO taxonomy developed by Biggs, the analysis indicates a smooth transition to level 5 but fails to differentiate between levels 5 to 8. This result may also reflect that the SOLO taxonomy has not been applied for this purpose previously and that the current application is too abstract to capture progression (for example) between levels 5 to 8.

Figure 4. **EQF: skills domain**



NB: Pre-structural (no relevance): fail, incompetent, misses the point.
Unistructural (one relevant aspect): identify, name, follow simple procedure.
Multistructual (several relevant independent aspects): combine, describe, enumerate, perform serial skills, list.
Relational (integration into a structure): analyse, apply, argue, compare/contrast, criticise, explain causes, relate, justify.
Extended abstract (generalisation to a new domain): create, formulate, generate, hypothesise, reflect, theorise.

Source: Keevy et al., 2017, p. 43

6.1.3. Progression in responsibility and autonomy

Using the categories proposed by Dreyfus and Dreyfus (1986) as reference, Figure 5 demonstrates a smooth increase in complexity, depth and breadth from level 1 to 8. This is not surprising as Dreyfus and Dreyfus was an important source of inspiration in the development of the EQF. The Dreyfus categorisation strongly emphasises how autonomy and responsibility is embedded in context, establishing an important connection to the broader understanding of competence as outlined in Sections 4.1 and 5.3.

Figure **5**. **EQF: autonomy and responsibility domain**

NB: Novice: has incomplete understanding, approaches tasks mechanistically and needs supervision to complete them.

Advanced beginner: has a working understanding, tends to see actions as a series of steps, can complete simpler tasks without supervision.

Competent: has a good working and background understanding, sees actions at least partly in context, able to complete work independently to a standard that is acceptable though it may lack refinement.

Proficient: has a deep understanding, sees actions holistically, can achieve a high standard routinely.

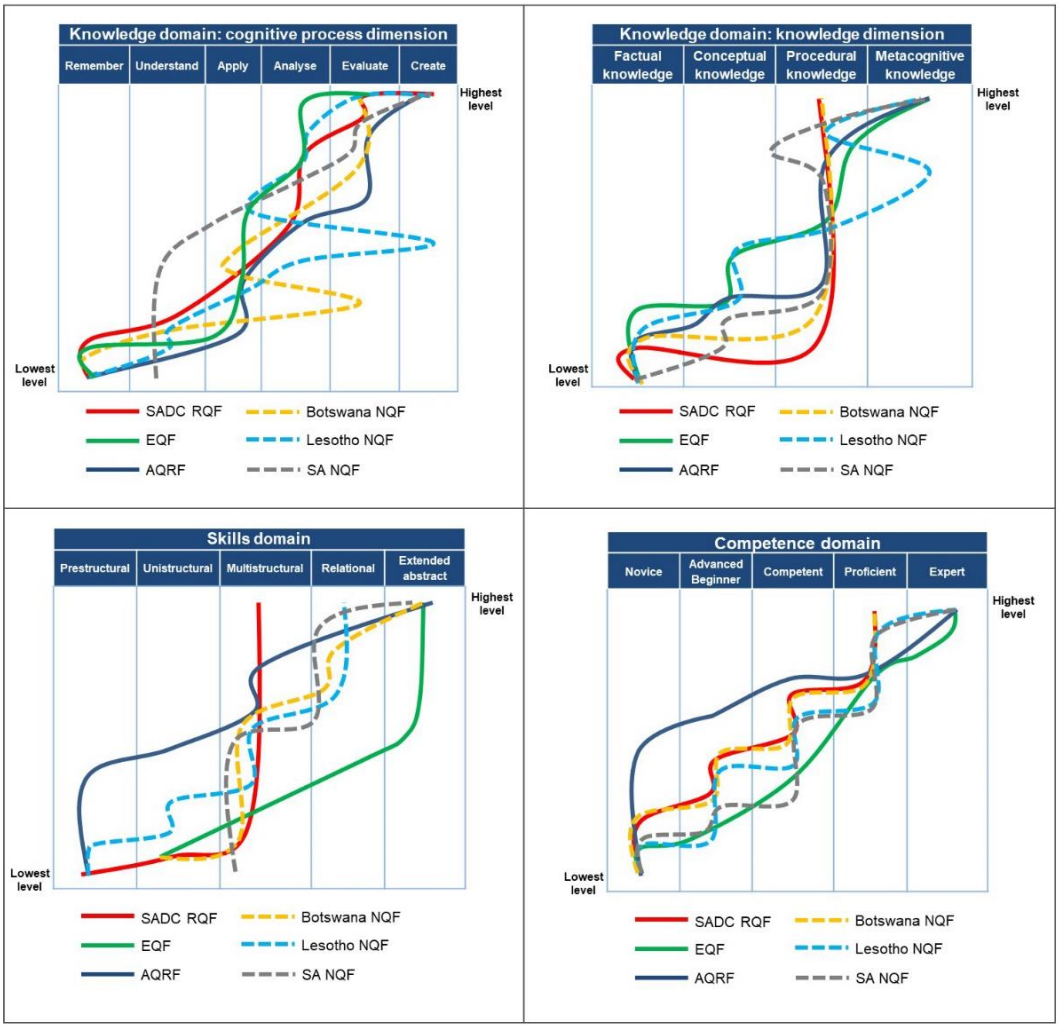
Expert: has an authoritative or deep holistic understanding, deals with routine matters intuitively, able to go beyond existing interpretations, achieves excellence with ease.

Source: Keevy et al., 2017, p. 46.

6.1.4. EQF level descriptors compared to other regional and national frameworks

To demonstrate how this analytical approach can support comparisons, Figure 6 presents a visual image of the comparison of the SADC, the EQF, the ASEAN qualifications reference framework (AQRF) and three NQFs in the Southern Africa region (South Africa, Lesotho and Botswana). This comparison shows that the interaction between the vertical and horizontal dimensions of the EQF is well balanced compared to some other framework descriptors. This may explain why the EQF descriptors have stood the test of time.

Figure 6. **The comparison of the SADC, the EQF, the Asian regional framework and three NQFs in the Southern Africa region (South Africa, Lesotho and Botswana)**



Source: Keevy et al., 2017, p. 5.

The approach developed by Keevy and colleagues (Keevy et al., 2017) for the SADC regional qualifications framework is interesting in a European context as it points towards a methodology allowing for more systematic analysis of level descriptors and their strengths and weaknesses. However, the methodology requires further development:

(a) overall reliability may be a problem as interpretation of the link between the descriptors and the different reference points will be coloured by the person carrying out the analysis;

(b) some of the reference points, for example the SOLO taxonomy, may be seen as too abstract to for this kind of exercise. There is a need to consider

whether more precise articulation of the progression indicated by SOLO can be developed.

The continuing development of world reference levels for qualifications (UNESCO, 2018) may provide an alternative and/or additional reference point for the comparative approaches indicated here. The important point to be taken from the SADC approach is that the quality of level descriptors very much depends on the interplay between their vertical and horizontal dimensions. As Figure 6 shows, existing level descriptors balance these dimensions to varying degrees, influencing their overall quality in significant ways.

CHAPTER 7.

Some concluding remarks

The observations made in this publication are limited to the terminological and conceptual features of the level descriptors and their domains and subdomains (vertical dimension). The extent to which descriptors are able to promote transparency at national and international levels depends on how they are interpreted and applied by stakeholders; this is something we have to come back to in the context of the overall analysis of European NQF developments. The analysis, however, points to some important dilemmas and challenges which have to be addressed in the coming years.

7.1. Balancing international comparability and national relevance

This publication shows that there is no single way of developing and defining level descriptors; the different approaches chosen at national level face different challenges. One group of countries has chosen to closely align national level descriptors to the EQF, emphasising international comparability as a key goal. This, however, runs the risk of limiting the national relevance and use of the descriptors. The EQF descriptors – deliberately using a general language – will not always be able to capture the complexities of a national qualifications system.

7.2. Emphasis on transversal skills and competences

A significant group of countries is seeking to broaden level descriptors to include transversal skills and competences. This allows them to strengthen the national relevance of the descriptors and to promote specific policy priorities and policies; the inclusion of key competences in a number of the national level descriptors exemplifies this aspect. This group of countries is characterised by increasing terminological and conceptual diversity; in some cases they demonstrate different interpretations of concepts, for example on where to draw the line between skills and competence.

7.3. Competence predominance

Some countries use the holistic concept of competence, emphasising that using competence along with knowledge and skills, could lead to atomisation and narrowing of education and training and lifelong learning strategies. Competence, it is argued, has to be treated as an overarching concept, signalling self-directed ability to interpret and apply knowledge, skills, attitudes and other personal and social abilities in work and study contexts. The revised EQF recommendation (Council of the European Union, 2017) defines competence as 'the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development' (Council of the European Union, 2017, Annex 1).

7.4. Interaction between comprehensive and sector-specific descriptors

Most European NQFs seek to cover all levels and types of qualification. This requires that level descriptors are defined in a general and neutral language, allowing them to reflect a complex and diverse reality. This, consequently, may reduce the ability of the descriptors to capture the detailed characteristics and needs of a subsystem. Countries have identified different solutions to this dilemma, in some cases introducing parallel descriptors, to be able to reflect better the character of the specific qualifications. The continued role played by the Dublin descriptors for higher education – as well as the introduction of level descriptors of different levels of generality in Poland – suggest a solution where countries operate with several layers of descriptors, emerging from the same core set of general descriptors. Without such consistency, however, there is a risk of creating competing and conflicting level descriptors that reduce, rather than increase, transparency.

7.5. Relevance of level descriptors beyond education and training

Compared to the Dublin descriptors developed for the qualifications frameworks in the European higher education area (QF-EHEA), the level descriptors triggered by the EQF give more emphasis to the link to the labour market. The importance of indicating levels of autonomy and responsibility is broadly agreed by all countries; in some it has been taken several steps further, notably by

adding transversal skills and competences and by clarifying the impact of the context on the understanding of levels. The descriptors of the Lithuanian NQF, referring to the characteristics, autonomy and variability of activities, point in this direction and will require further attention in the coming period, particularly if NQFs are to be opened to private and non-formal qualifications (as initiated by a number of countries such as the Netherlands, Poland, Slovenia or Sweden).

7.6. Interaction between the vertical and horizontal dimensions of level descriptors

This report shows that the quality of level descriptors depends on the balance between the two dimensions of vertical levels and horizontal learning domains. Comparative work, carried out in South Africa, indicates that this is a critical feature to be addressed in the future, although the EQF level descriptors overall seem to be reasonably well balanced.

7.7. The importance of alignment

The broader impact of qualifications frameworks and their descriptors requires alignment with the use of learning outcomes at other levels and for other purposes. The impact of frameworks requires that descriptors operate as reference points for the application of learning outcomes in qualification standards, curricula and assessment specifications.

7.8. Towards a common language

A total of 34 countries had, by the end of 2017, formally linked (referenced) their national qualifications frameworks to the EQF: Austria, Belgium (Flanders and Wallonia), Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, the former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lichtenstein, Lithuania, Luxembourg, Malta, Montenegro, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Sweden, Switzerland, Turkey and the United Kingdom (England, Scotland and Wales). The remaining countries are expected to follow in 2018, which means that the first stage of EQF referencing is nearly finished. Completion of the first stage of referencing will be followed by regular updates in the event of major changes by the countries; EQF implementation is a continuing

process. Three countries, Belgium (Flanders), Estonia and Malta, have presented updates starting this phase: for Malta, this was the fourth update since 2009.

This process has been generally successful, illustrating that countries have taken on board the key terminological and conceptual elements of the EQF descriptors. Common understanding, both of similarities and of differences, seems to outweigh the divergences also identified in this analysis. Terminological convergence, however, can be seen as an important first step but not as sufficient on its own to ensure mutual trust and understanding. The impact of the level descriptors depends on how and by whom they are applied, and the extent to which these processes are transparent and subject to continuous quality assurance and improvement.

List of abbreviations

AQRF	Asian regional framework
ANPAL	*agenzia nazionale politiche attive del lavoro* national agency for active labour market policies (Italy)
BEP	*brevet d'études professionnelles* vocational studies certificate (France)
BP	*brevet professionnel* vocational certificate (France)
BT	*brevet de technicien* technical certificate (France)
BTS	*brevet de technicien supérieur* higher technician certificate (France)
CAP	*certificat d'aptitude professionnelle* certificate of vocational ability (France)
CCEA	Council for Curriculum Examinations and Assessment Regulation (Northern Ireland)
CFPA	*certificat de formation professionnelle des adultes* certificate of vocational training for adults (France)
CNCP	*Commission Nationale de la Certification Professionnelle* National Commission for Professional Certification (France)
CQFW	credit and qualifications framework for Wales
DEKRA	*Deutscher Kraftfahrzeug-Ueberwachungsverein* German Motor Vehicle Monitoring Association
DQR	*Deutscher Qualifikationsrahmen* German qualifications framework for lifelong learning
DUT	*Diplôme Universitaire de Technologie* diploma from a university institute of technology (France)
EDUFI	Finnish national agency for education
EOPPEP	Greek National Organisation for the Certification of Qualifications and Vocational Guidance
EQF	European qualifications framework
FINQF	Finnish national framework for qualifications and other competence modules
ICT	information and communication technology
JET	Joint Education Trust (South Africa)
MECES	*Marco Español de Cualificaciones para la Educación Superior* Spanish qualifications framework for higher education
MECU	*Marco Español de Cualificaciones* Spanish qualifications framework
MYK	*Mesleki Yeterlilik Kurumu*

	Vocational Qualification Institute (Turkey)
NCFHE	National Commission for Further and Higher Education (Malta)
NCP	national coordination point
NQF	national qualifications framework
NQFL	*Der Nationale Qualifikationsrahmen des Fürstentums Liechtenstein* national qualifications framework for Liechtenstein
NQF-VPQ	Swiss NQF for vocational and professional qualifications
NSK	*Národní soustava kvalifikací* national register of vocational qualifications (Czech Republic)
Ofqual	Office of Qualifications and Examinations Regulation (UK)
PQF	Polish qualifications framework
QF-EHEA	qualifications frameworks in the European higher education area
QNQ	*quadro nacional de qualificacoes* Portuguese national qualifications framework
RQF	regulated qualifications framework (UK)
SADC	Southern African Development Community
SCQF	Scottish credit and qualifications framework
SeQF	Swedish qualifications framework for lifelong learning
SERI	State Secretariat for Education, Research and Innovation of the Swiss Confederation
SOLO	structure of the observed learning outcome
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VET	vocational education and training

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ANNEXES

ANNEX 1.

Level descriptors at European level

A1.1. Level descriptors in the European qualifications framework

	Knowledge	Skills	Responsibility and autonomy
	In the context of EQF, knowledge is described as theoretical and/or factual	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments)	In the context of EQF, responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
Level 1 The learning outcomes relevant to level 1 are:	basic general knowledge	basic skills required to carry out simple tasks	work or study under direct supervision in a structured context
Level 2 The learning outcomes relevant to level 2 are:	basic factual knowledge of a field of work or study.	basic cognitive and practical skills required to use relevant information to carry out tasks and to solve routine problems using simple rules and tools	work or study under supervision with some autonomy
Level 3 The learning outcomes relevant to level 3 are:	knowledge of facts, principles, processes and general concepts, in a field of work or study	a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	• take responsibility for completion of tasks in work or study • adapt own behaviour to circumstances in solving problems
Level 4 The learning outcomes relevant to level 4 are:	factual and theoretical knowledge in broad contexts within a field of work or study	a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	• exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change • supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities •

	Knowledge	Skills	Responsibility and autonomy
Level 5 ([26]) The learning outcomes relevant to level 5 are:	comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	• exercise management and supervision in contexts of work or study activities where there is unpredictable change • review and develop performance of self and others
Level 6 ([27]) The learning outcomes relevant to level 6 are:	advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	• manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts • take responsibility for managing professional development of individuals and groups
Level 7 ([28]) The learning outcomes relevant to level 7 are:	highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research; critical awareness of knowledge issues in a field and at the interface between different fields	specialised problem-solving skills required in research and/or innovation to develop new knowledge and procedures and to integrate knowledge from different fields	• manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches • take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8 ([29]) The learning outcomes relevant to level 8 are:	knowledge at the most advanced frontier of a field of work or study and at the interface between fields	the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	• demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

NB: Compatibility with the framework for qualifications of the European higher education area. The framework for qualifications of the European higher education area provides descriptors for three cycles agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process and revised in 2018. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle.

Source: Council of the European Union, 2017.

([26]) The descriptor for the short cycle developed by the joint quality initiative as part of the Bologna process, that can be within or linked to the first cycle, corresponds to the learning outcomes for EQF level 5.

([27]) The descriptor for the first cycle corresponds to the learning outcomes for EQF level 6.

([28]) The descriptor for the second cycle corresponds to the learning outcomes for EQF level 7.

([29]) The descriptor for the third cycle corresponds to the learning outcomes for EQF level 8.

A1.2. Level descriptors in the framework for qualifications of the European higher education area

	Outcomes	ECTS credits
Short cycle qualification	Qualifications that signify completion of the higher education **short cycle** are awarded to students who: • have demonstrated knowledge and understanding in a field of study that builds upon general secondary education ([30]) and is typically at a level supported by advanced textbooks; such knowledge provides an underpinning for a field of work or vocation, personal development, and further studies to complete the first cycle • can apply their knowledge and understanding in occupational contexts • have the ability to identify and use data to formulate responses to well-defined concrete and abstract problems • can communicate about their understanding, skills and activities, with peers, supervisors and clients • have the learning skills to undertake further studies with some autonomy	Typically include 90-120 ECTS credits
First cycle qualification	Qualifications that signify completion of the **first cycle** are awarded to students who: • have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, while supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study • can apply their knowledge and understanding in a manner that indicates a professional ([31]) approach to their work or vocation and have competences ([32]) typically demonstrated through devising and sustaining arguments and solving problems within their field of study • have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social,	Typically include 180-240 ECTS credits

([30]) General secondary education also includes vocational education with a sufficiently general component.

([31]) The word professional is used in the descriptors in its broadest sense, relating to those attributes relevant to undertaking work or a vocation and that involves the application of some aspects of advanced learning. It is not used with regard to those specific requirements relating to regulated professions. The latter may be identified with the profile/specification.

([32]) The word competence is used in the descriptors in its broadest sense, allowing for gradation of abilities or skills. It is not used in the narrower sense, identified solely from a yes/no assessment.

	Outcomes	ECTS credits
	scientific or ethical issues • can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences • have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy	
Second cycle qualification	Qualifications that signify completion of the second cycle are awarded to students who: • have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with the first cycle, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research ([33]) context • can apply their knowledge and understanding, and problem-solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study • have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements • can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously • have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous	Typically include 90-120 ECTS credits, with a minimum of 60 credits at the level of the 2nd cycle
Third cycle qualification	Qualifications that signify completion of the third cycle are awarded to students who: • have demonstrated systematic understanding of a field of study and mastery of the skills and methods of research associated with that field • have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity • have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of	Not specified

([33]) The word research is used to cover a wide variety of activities, with the context often related to a field of study; the term is used here to represent careful study or investigation based on systematic understanding and critical awareness of knowledge. The word is used in an inclusive way to accommodate the range of activities that support original and innovative work in the whole range of academic, professional and technological fields, including the humanities, and traditional, performing, and other creative arts. It is not used in any limited or restricted sense, or relating solely to a traditional scientific method.

	Outcomes	ECTS credits
	which merits national or international refereed publication • are capable of critical analysis, evaluation and synthesis of new and complex ideas • can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise • can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society	

Source: Danish Ministry of Science, Technology and Innovation, 2005; EHEA Ministerial Conference, 2018.

ANNEX 2.

Level descriptors in national qualifications frameworks ([34])

A2.1. 28 EU Member States

A2.1.1. Belgium

Belgium (Flemish Community)

Main NQF level descriptor elements in Belgium (Flanders)

Level descriptor elements	
Knowledge Skills	Context Autonomy Responsibility

([34]) National level descriptors available in English were included.

Descriptors for levels 1 to 8

	Knowledge, skills	Context, autonomy, responsibility
Level 1	• recognising materials, concise, unambiguous information and simple, concrete basic concepts and rules of a part of a specific area • applying one or more of the following skills: • - *cognitive skills:* retrieving information from one's memory, remembering and applying it - *motor skills*: using automatisms and imitating practical actions • performing repetitive and recognisable actions in routine tasks.	• acting in a stable, familiar, simple and well-structured context, in which time pressure is of little importance • acting with non-delicate objects • functioning under direct supervision • showing personal effectiveness
Level 2	• understanding information, concrete concepts and standard procedures within a specific area. • applying one or more of the following skills: - *cognitive skills*: analysing information by distinguishing and relating elements - *motor skills*: transforming sensory perceptions into motor actions performing acquired practical-technical actions. • applying a selected number of standard procedures when performing tasks; applying prescribed strategies to solve a limited number of concrete, recognisable problems	• acting in a limited number of comparable, simple, familiar contexts • acting with delicate, passive objects • functioning under supervision with limited autonomy • taking limited executive responsibility for one's work
Level 3	• understanding a number of abstract concepts, laws, formulae and methods within a specific area; distinguishing between major and minor issues in information. • applying one or more of the following skills: - *cognitive skills*: analysing information using deduction and induction synthesising information - *motor skills*: making constructions based on a plan performing actions which require tactical and strategic insight applying artistic-creative skills • choosing, combining and applying standard procedures and methods to perform tasks and solve a variety of well-defined, concrete problems	• acting in comparable contexts in which a number of factors change • acting with delicate, active objects • functioning with certain autonomy within a well-defined set of tasks • taking limited organisational responsibility for one's work
Level 4	• interpreting concrete and abstract data (information and concepts) within a specific area • applying reflective cognitive and productive motor skills	• acting in a combination of changing contexts • functioning autonomously with some initiative • taking complete responsibility for one's work

	Knowledge, skills	Context, autonomy, responsibility
	• evaluating and integrating data and developing strategies to perform diverse tasks and solve diverse, concrete, non-familiar (but subject-specific) problems	• evaluating and correcting one's functioning with a view to obtaining collective results
Level 5	• expanding the information in a specific area with concrete and abstract data, or completing it with missing data; using conceptual frameworks; being aware of the scope of subject-specific knowledge • applying integrated cognitive and motor skills • transferring knowledge and applying procedures flexibly and inventively for the performance of tasks and for the strategic solution of concrete and abstract problems	• acting in a range of new, complex contexts • functioning autonomously with initiative. • taking responsibility for the achievement of personal outcomes and the stimulation of collective results.
Level 6	• critically evaluating and combining knowledge and insights from a specific area • applying complex specialised skills, linked to research results • gathering and interpreting relevant data and making innovative use of selected methods and resources to solve non-familiar complex problems	• acting in complex and specialised contexts • functioning with complete autonomy and considerable initiative • taking shared responsibility for the definition of collective results
Level 7	• integrating and reformulating knowledge and insights from a specific area or at the interface between different areas • applying complex new skills, linked to autonomous, standardised research • critically evaluating and applying complex, advanced and/or innovative problem-solving techniques and methods	• acting in unpredictable, complex and specialised contexts • functioning with complete autonomy and a right of decision • taking final responsibility for the definition of collective outcomes
Level 8	• expanding and/or redefining existing knowledge from a substantial part of a specific area or at the interface between different areas • interpreting and creating new knowledge through original research or advanced scientific study • designing and executing projects which expand and redefine existing procedural knowledge, aimed at the development of new skills, techniques, applications, practices and/or materials	• acting in very complex contexts with far-reaching, innovative implications. • taking responsibility for the development of professional practice or scientific research with a highly critical attitude and steering capacity.

Source: Flemish Government, 2009; Agency for Quality Assurance in Education and Training, 2014.

Belgium (French Community)

Main NQF level descriptor elements in Belgium (French Community)

Level descriptor elements	
Knowledge **Skills**	**Context** **Autonomy** **Responsibility**

Descriptors for levels 1 to 8

	Knowledge, skills	Context, autonomy and responsibility
Level 1	Knowledge, know-how, behavioural know-how not referenced to a specific field of work or study, enabling the performance of simple and repetitive tasks in the reproduction of simple processes.	Acting under direct supervision within a structured and defined context that is part of a non-specific work environment and/or field of study.
Level 2	Basic knowledge, know-how, behavioural know-how within a specific field of work or study enabling the performance of a set of tasks with no requirement to choose the methods/tools/equipment, in the application of simple and standard processes.	Acting under supervision in known and defined situations relating to a specific field of work or study, with a degree of responsibility limited to the execution of tasks.
Level 3	General knowledge, know-how, behavioural know-how within a specific field of work or study enabling the performance of a set of tasks involving the choice of methods/tools/equipment in the application of complex processes.	Acting with a degree of autonomy and responsibility limited to the choices presented and deployed in situations characteristic of a field of work or study in which a limited number of factors vary.
Level 4	General knowledge, know-how, behavioural know-how within a specific field of work or study enabling the learner to seek out and select relevant information with the aim of mobilising and integrating knowledge/methods/practices in solving concrete problems where the indications are clear and where there are a finite and limited number of possible solutions.	Acting with a limited margin of initiative in situations characteristic of a field of work or study in which a large number of predictable factors are likely to change, and with full responsibility for one's work.
Level 5	Specialised knowledge, know-how, behavioural know-how within a specific field of work or study enabling the analysis, completion and articulation of information on the basis of the knowledge/methods/practices in one's specialised field, with the aim of reorganising it and of devising appropriate	Acting with a wide margin of initiative in situations characteristic of a field of work or study in which changes are unpredictable, with full responsibility for one's work.

	Knowledge, skills	Context, autonomy and responsibility
	solutions to solve abstract problems, where the indications are not clear and where multiple solutions are possible.	
Level 6	In-depth knowledge, know-how, behavioural know-how within a specific field of work or study enabling the learner to demonstrate understanding and critical use of the knowledge/methods/practices in his or her specialised field as well as the various dimensions and constraints of the situation, with the aim of formulating and/or implementing relevant (or new) solutions in solving complex problems or situations.	Acting with autonomy and full responsibility in situations characteristic of a field of work or study in which changes are unpredictable.
Level 7	Highly specialised knowledge, know-how, behavioural know-how within a specific field of work or study enabling the learner to demonstrate mastery and critical thinking in relation to the knowledge/methods/practices within his or her specialised field and at the interface with other specialised fields, with the aim of formulating and/or implementing innovative solutions in developing knowledge, plans (or procedures).	Acting with autonomy and full responsibility in new situations in a field of work or study and/or at the interface with several fields.
Level 8	The most advanced knowledge, know-how, behavioural know-how within a specific field of work or study, or at the interface with several fields, enabling the learner to demonstrate recognised expertise in relation to the knowledge/methods/practices within his or her specialised field and at the interface with other specialised fields, with the aim of extending or redefining existing knowledge (and procedures) in research and/or innovation in a novel and significant way.	Acting with autonomy and full responsibility in the most advanced situations, at the forefront of a field of work or study and/or at the interface with several fields.

Source: Fédération Wallonie – Bruxelles, 2013; 2015.

Belgium (German-speaking Community)

The level descriptors of the qualifications framework of the German-speaking Community of Belgium are not available in English translation. They are available in German.

Main categories of level descriptors of the qualifications framework of the German-speaking Community of Belgium

Action competence *(Handlungskompetenz)*			
Subject/occupation-oriented competence *(Fachliche Kompetenz)*		**Personal competence** *(Personale Kompetenz)*	
Knowledge	**Skills**	**Social competence**	**Autonomy**

Source: Ministry of the German-speaking Community of Belgium, 2013 [in German].

A2.1.2. Bulgaria

Main NQF level descriptor elements in Bulgaria

Level descriptor elements					
Knowledge: • **theoretical** and/or • **factual**	**Skills**: • **cognitive** *(involving the use of logical, intuitive and creative thinking)* • **practical** *(involving manual dexterity and the use of methods, materials, tools and instruments)*	**Competences (personal and professional)**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**

Descriptors for levels 1 to 8 (plus level 0)

Level 0 – preparatory level					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has basic concepts about the surrounding world • follows a chronological order in performing familiar tasks • familiarity with necessary primary education tools	• can understand and carry out simple tasks • creatively expresses acquired basic ideas about the surrounding world • uses familiar materials to fulfil tasks	• participates actively in simple, familiar activities • ability to perform tasks under the supervision of an adult • knows the consequences / results of one's own actions		• can understand and communicate brief and simple oral information • works in a group, showing tolerance towards the other children in the group • begins to express own independence as a new social role	

Level 1					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has basic general knowledge of the world required for further training and lifelong learning • knows basic rules for wellbeing and environmentally friendly behaviour • has some basic general knowledge	• has practical skills required to carry out identical and simple tasks • ability to apply acquired knowledge to carry out specific educational tasks • makes plausible suppositions based on the information the child has gathered about the world	• works under close supervision, following instructions or a pattern • with the help of the teacher chooses suitable means of information to carry out an educational task independently and/or in a group • assesses own and others' actions with the help of the teacher	• studies and works together with the others to gather and exchange information	• builds up confidence and develops skills for verbal and written communication • protects own rights without violating those of others	

Level 2					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has basic factual knowledge in a given field of study • knows how to extract, select and use simple information • has basic knowledge of important social spheres (family, school, working environment, small community)	• has basic cognitive and practical skills required to carry out simple tasks, solve routine problems and do routine activities • applies a limited number of skills to carry out more complex tasks in familiar contexts • establishes simple correlations according to a set of criteria in the various fields of work or study • carries out simple operations by means of various instruments and	• works with a relative degree of autonomy in familiar contexts, taking responsibility for the performance of the assigned task • works in unfamiliar contexts following the written or oral instructions of the task supervisor • knows the possibilities and risks of using the acquired technologies on one's own	• is aware of the possibility to continue his/her education and training • acknowledges the need to acquire some key competences (mother tongue, mathematics, computer literacy	• works in a group, accepts and expresses an opinion and/or criticism • orients oneself and acts adequately in a specific context • exchanges oral and written information • communicates successfully in a diverse social and cultural environment	• carries out routine tasks under unchanging circumstances.

	easy-to-use machines. • understands instructions similar to what has been previously taught. • can explain the activities s/he has/not done and the reasons for this				

Level 3					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• possesses extended knowledge in a given sphere of training, the different spheres of training or job • knows ways of searching, extraction, processing and use of different types of information • has knowledge about universal values, democracy, and civic society • has knowledge of the type of objects (raw materials, materials, instruments, machines, apparatuses and facilities) in a specific field, their properties, purpose and interrelation (technological sequence and requirements for performing various activities), sometimes their structure (composition) as well • expresses oneself using the corresponding terminology.	• independently carries out previously acquired tasks (behaviour) • takes a decision for change following rules and instructions if the work conditions change • carries out complex operations by means of various instruments, machines, apparatuses, measurement devices • understands the meaning of instructions, tasks and explanations different from the ones previously studied • explains the activities s/he has done, proposing new solutions	• works independently under changing circumstances, takes responsibility to carry out the task assigned and evaluates own performance according to previously established criteria • takes a critical attitude in applying independently the acquired technologies	• can take decisions about his/her own education and future career development by self-evaluating his/her own competences/qualification • is aware of the possibility to continue his/her own education and training • readiness to participate in training, recognising the field in which it is necessary to acquire more knowledge, skills and competences	• communicates effectively with colleagues, clients and direct supervisor • communicates in one's first and second foreign language	• does comprehensive activities under changing circumstances

Level 4					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has in-depth factual and theoretical knowledge in a broad context within the fields of study or work • familiarity with ways of processing and using complex information • expresses verbal and written ideas, formulates instructions, tasks, explanations, using the corresponding terminology • develops evaluation criteria • has in-depth knowledge of democracy, civil society and international legal order	• has a wide range of cognitive and practical skills to solve complex problems • has creative thinking and employs alternative methods and ways in familiar and/or unfamiliar situations or environment • considers and views task and problem results within a field of work or study from different angles according to previously established criteria • transfer of knowledge and skills between different fields of study or work in carrying out complex tasks and solving specific problems • organises an industrial process according to conditions that have become known during study • can carry out complex operations by means of instruments, machines, apparatuses, measurement devices • controls and helps staff, giving explanations or showing how to do a particular activity • evaluates the quality of the finished product and performance of the team members • develops an action plan using the available resources	• shows initiative and ability to set oneself goals, to plan, justify own actions and take responsibility for them • takes responsibility while monitoring or supervising the routine work of others • expresses a critical attitude and takes responsibility while applying acquired technologies • overall attitude is one of responsibility and participation in public life • works independently under changing conditions, taking responsibility to carry out both individual and collective tasks entrusted to the team one is supervising • makes a motivated evaluation of the team members and the quality of performance	• can take decisions about one's own education and future career development on the basis of one's own competences /qualifications • is aware of further education and training opportunities. • uses various ways of extending and updating his/her own vocational qualification • recognises the need for staff training and offers them suitable opportunities	• works constructively in heterogeneous groups/teams • can communicate in one's first and second foreign language • effectively communicates with colleagues in different positions in the corporate hierarchy; negotiates orders • independently decides on the ways of successful public presentation of different types of information in a field of study or work • has mastered mechanisms for constructive social participation and change, applying them in various activities and initiatives	• carries out complex tasks in changing conditions and takes responsibility for the work of others

Level 5					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has in-depth factual and theoretical knowledge in broad contexts within a field of study or work • knows how to process, use and analyse complex specific information • is familiar with the principles of planning, organisation and control of processes in a particular field of activity • develops assessment criteria	• plans, organises and controls activities, including an industrial process • makes a motivated evaluation of the quality of performance • makes proposals for performance optimisation • possesses business communication skills • carries out complex operations by means of various instruments, machines, apparatuses, measurement devices • controls and helps staff, providing explanations or demonstrating how to do a particular activity • evaluates product quality and the performance of the team members • develops an action plan, using the available resources • makes proposals for improving the equipment, staff and the activities of the organisation	• works independently under changing conditions, taking responsibility to carry out both individual tasks and collective tasks entrusted to the team one is supervising • bears responsibility for the performance of the team one is supervising • makes a motivated evaluation of team and the quality of performance • takes responsibility for the appropriate use of the equipment • feels a strong sense of responsibility and participates actively in public life	• recognises the gaps in one's own knowledge, skills and competences and takes the necessary actions to improve one's own qualification by self-study and participation in seminars, training • uses various ways of expanding and updating one's own vocational qualification • recognises the need for staff training and offers them suitable opportunities	• communicates effectively at different levels • manages the performance of working groups/teams • presents publicly different types of information • makes analyses, oral and written presentations, formulates instructions, tasks, and explanations, using the corresponding terminology both in Bulgarian and in a foreign language	• carries out comprehensive tasks under changing circumstances, takes managerial responsibility for the performance of others and allocation of resources

Level 6 ([35])					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has and uses detailed, theoretical and concrete practical knowledge in the field of study • makes a critical analysis of principles and processes	• has mastered the methods and means in the field of study • applies the acquired knowledge and practical experience in a professional way, adopting innovative, unconventional approaches and making well-justified decisions	• takes responsibility for managing high performance teams and resources, including in extreme situations during site operation, and structure management • has creative thinking and practical skills in project development and implementation, considering the influence of a variety of factors • takes responsibility during site operation • can evaluate one's own and other people's performance • manages teamwork and provides professional training to staff	• judges critically one's own preparation and the degree to which the acquired knowledge is consistent with the knowledge required by the profession • defines one's own education needs to improve one's own qualification and/or gain further professional qualifications	• analyses ideas, addresses problems and proposes solutions in professional contexts to equals and seniors, as well as to non-specialists • formulates convincing opinions based on qualitative and quantitative facts, arguments and criteria • presents one's own views on particular and global issues clearly, judges and accepts the arguments of interlocutors • demonstrates commitment and solidarity towards others • can communicate effectively in some of the most commonly used European languages.	• gathers, processes and analyses data with the purpose of optimisation and/or final solutions or innovative ideas • contributes to the completion of operative tasks in conventional and unconventional situations • settles social, moral and ethical issues, especially in teamwork and training

([35]) Degree of a professional bachelor.

Level 6 ([36])					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has extensive and in-depth theoretical and factual knowledge in a field of study, including knowledge relating to the latest achievements • interprets the acquired knowledge independently, relating it to facts and critical perception, comprehension and formulation of theories and principles	• able to use methods and means which allow for the accomplishment of complex tasks • applies logical thinking, shows creativity and takes novel approaches in carrying out unconventional tasks	• possesses a capability for administrative management of complex professional activities, including teams and resources • assumes responsibility for taking decisions in adverse circumstances under the influence of a variety of interacting factors which are hard to foresee • shows creativity and initiative in management • recognises the need for staff training with the purpose of increasing staff effectiveness	• assesses one's own qualifications properly by evaluating the knowledge and skills acquired so far, recognising the need for expanding and updating one's own professional qualifications	• clear formulation and expression of ideas, problems and solutions before experts and non-experts • expresses an opinion and shows understanding of issues, using methods based on qualitative and quantitative descriptions and evaluation • has a broad outlook on life and shows understanding and solidarity towards others • can communicate effectively in some of the most commonly used European languages	• gathers, classifies, assesses and interprets data in a field of study to fulfil specific tasks • applies the acquired knowledge and skills in new and unfamiliar contexts • capable of making analyses in broader or interdisciplinary contexts • adopts new strategic approaches • formulates and expresses own opinion about social and ethical issues arising during work

([36]) Bachelor degree.

Level 7					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has a wide spectrum of theoretical and practical knowledge, part of which is specialised knowledge in the respective field, which serves to broaden the knowledge acquired during the previous education stage • knows and expresses theories, concepts, principles and observation of certain laws • has highly specialised practical and theoretical knowledge, including avant-garde knowledge, which serves as a basis for originality in developing and applying new ideas and solutions • demonstrates critical understanding of the knowledge in the field of study and interdisciplinary relationships	• has a wide range of practical and cognitive skills in different fields of study required to understand abstract problems and develop creative solutions • carries out problem diagnostics • carries out problem diagnostics and problem solving, based on contemporary research through integrating knowledge from new or interdisciplinary fields, which are related to implementation of research and introduction of innovations • makes an adequate assessment of situations with insufficient or limited data and unpredictability • develops new and various skills as a response to emerging knowledge and practices • freely employs innovative methods and instruments in solving complicated and unpredictable problems in a specialised field of work • finds and supports arguments in solving interdisciplinary problems. • shows initiative in a field of work and study in complex	• can build administrative and organisational structures, independently manage teams to find solutions to complex problems in unpredictable contexts with a variety of interacting factors and possibilities • demonstrates operational mastery in managing change in complex contexts • shows creativity and innovation in project development • initiates processes and organises activities which require very good coordination • formulates policies and demonstrates leadership skills for their implementation	• systematically and thoroughly evaluates one's own knowledge, recognising the need for acquiring more knowledge • demonstrates a high degree of autonomy, easily orients oneself to complex educational content, adopting own approaches and methods to master it • uses a variety of methods and techniques to master complex subject areas • has a rich conceptual approach and is capable of conceptual and abstract thinking	• can express one's own opinion in a simple and clear way, formulates problems and proposes possible solutions before expert and non-expert audiences, using a large number of techniques and approaches • develops and presents well-argued opinions about social processes and practices, making justified proposals for their improvement or change • can communicate effectively in some of the most commonly used European languages	• gathers, processes and interprets specialised information required to find solutions to complex problems in a field of study • integrates a wide spectrum of knowledge and sources in new and relatively unfamiliar contexts • makes reasonable evaluations and finds solutions in complex interactional contexts • demonstrates adequate behaviour and interaction in professional and/or specialised contexts • ability to solve problems by integrating comprehensive sources in unfamiliar contexts with insufficient information • can initiate

	unpredictable contexts which require finding solutions to problems with a number of interacting factors				changes and manage development processes in difficult contexts • becomes involved in important scientific, social and moral problems arising during work or study processes

Level 8					
Knowledge	**Skills**	**Competences**			
		Autonomy and responsibility	**Learning competences**	**Communicative and social competences**	**Professional competences**
• has and uses specialised and systematic knowledge to make a critical analysis and synthesise new ideas • proficiently employs the methods of scientific research in a field of study • ability to broaden and improve current knowledge in a field of study as well as its interaction with close scientific areas • demonstrates knowledge with the highest degree of complexity and carries out original research • demonstrates knowledge and understanding at the	• ability to form and manage networks or teams, allocate time and manage human and financial resources, find solutions to complicated problems by employing new technological methods and instruments • quickly gathers, extracts, classifies, synthesises and assesses the required data both from detailed and scarce sources • ability to solve and overcome serious problems in a research field and/or innovation, improve standard models and approaches, develop innovative solutions by combining a variety of original strategies and technologies, manage unsuccessful attempts and continue developing, improve standard models and	• creates and interprets new knowledge on the basis of own research or other scholarly activity • uses the new knowledge to demonstrate an ability to expand the scope of existing scientific areas and recognises the need for live publications • ability to evaluate the merits of own research • ability to make up, design, implement and adapt a contemporary research process	• has a capacity for a systematic acquisition and understanding of a considerable amount of knowledge about the latest scientific achievements or a field of professional practice	• shows qualities and transferable skills which require an enhanced sense of personal responsibility and self-initiative in complex and unpredictable circumstances as well as in professional or similar contexts • ability to conceptualise, design and implement projects with the purpose of generating new knowledge, applying and understanding the latest achievements, as well as to adapt the	• has a profound understanding of the techniques used for scientific and complex academic research • makes a thorough evaluation of complex issues in a field of study, often in the absence of extensive data, and presents one's own ideas and conclusions clearly and effectively before experts and non-experts • capacity to continue

highest possible degree not only of chosen field of study but also in neighbouring scientific areas • demonstrates and applies knowledge through the degree of complexity of conducted, recognised and well-founded academic research	approaches • has methods and means to foresee changes and problems, disregard the context and think innovatively, develop and propose reasonable plans, put into effect new ideas, acquire quickly new skills and qualities, foresee technological and creative development, write and present new scholarly and technical documents (scientific articles, summaries, reports, figures, graphs), communicate through different media in front of diverse audiences • has the following skills: resilience, entrepreneurial spirit, tenacity, strictness, adaptability and intellectual flexibility	in conformity with scholarly norms		project design to unpredictable circumstances • can communicate effectively in some of the most common European languages	conducting fundamental or applied scientific research at increasingly complex levels, contributing to the development of new techniques, ideas or approaches

Source: Government of the Republic of Bulgaria, 2012; Bulgarian Ministry of Education, Youth and Science, 2013.

A2.1.3. The Czech Republic

The Czech Republic has not yet developed a comprehensive NQF with common level descriptors for all qualifications awarded in the different education and training subsystems. The level descriptors of the national register of vocational qualifications (NSK) – comprising vocational qualifications that can be obtained by validation of non-formal and informal learning – are presented below. Integrated description of competence characteristics (the notion of competence encompasses knowledge and skills and the capacity to combine them) was used for defining levels 1 to 8 in the NSK. The level descriptors reflect the complexity of work activities.

NSK descriptors for levels 1 to 8

	Description of competences
Level 1	• identify work tools, equipment, raw materials, etc. • carry out tasks according to simple, unchanging instructions • identify problems which occur while following these instructions
Level 2	• be familiar with materials describing the work to be done • choose appropriate tools, materials, etc. for use in each procedure or method, from among the various options • evaluate the quality of own products or services • identify problems which occur while following instructions • carry out instructions in standard situations with a minimum of changes
Level 3	• be familiar with documentation, norms and standards in common use in the field • select appropriate procedures, methods, tools, raw materials, etc. from various options, according to conditions and requirements • evaluate the quality of own products or services, and those of others. • carry out quality control, determine the causes of deficiencies and decide how to eliminate them • identify problems which occur while following the selected procedures, determine their causes and decide how to solve them • carry out selected procedures depending on conditions and requirements including taking into account social, economic, and ecological considerations • present own work, products or services • direct a small group carrying out simple or supporting activities
Level 4	• be familiar with documentation, norms, standards and regulations in common use in the field • select appropriate procedures, methods, tools, raw materials, etc. from various options, according to conditions and requirements • evaluate the quality of own products or services, and those of others. • carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them • identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • identify social, economic and environmental aspects of any problems which arise • determine the causes of unusual behaviour from individuals and objects in the workplace • assess the relevance of technical information • evaluate the methods of others from the point of view of using them in his or her own work • carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations • use technical information from a variety of sources in problem solving. • make suggestions for improving results • design simpler analogues of existing procedures and products • further development of proposals for new products and procedures • present own work, products or services, discuss problems and find solutions and communicate effectively

	Description of competences
	• direct a small group carrying out selected procedures depending on conditions and requirements
Level 5	• be familiar with documentation, norms, standards and regulations in use in the field to the extent that he or she can explain them to others in standard situations • select appropriate procedures, methods, tools, raw materials, etc. from various options, according to conditions and requirements • evaluate the quality of own products or services, and those of others • carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them • identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • identify social, economic and environmental aspects of any problems which arise • distinguish between usual and unusual behaviour from individuals and objects in the workplace, determine causes and context of unusual behaviour, and draw conclusions and formulate proposals • analyse moderately complex systems, phenomena and processes • evaluate the relevance of technical information to resolving standard problems • evaluate the methods of others from the point of view of using them in own work • carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations • independently carry out common technical tasks by standard methods • solve problems requiring abstraction and employ simple research methods • use technical information from a variety of sources in problem solving • integrate several components into complex solutions • formulate proposals for improvements including proposals for new processes. • design moderately complex procedures and products • present own work, products or services, discuss problems and find solutions, communicate effectively and present convincing arguments • direct a group carrying out moderately complex technical tasks depending on unforeseen conditions and requirements
Level 6	• be familiar with documentation, norms, standards and regulations in use in the field to the extent that he or she can explain them to others in standard and non-standard situations • select appropriate procedures, methods, tools, raw materials, etc. from various options, according to conditions and requirements • evaluate the quality of own products or services, and those of others • carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them • identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • identify social, economic and environmental aspects of any problems which arise • analyse the causes and context of unusual behaviour from individuals and objects in the workplace, draw conclusions and formulate proposals • analyse moderately complex systems, phenomena and processes • assess the relevance of technical information • evaluate the methods of others from the point of view of using them in own work • carry out selected procedures, with modifications depending on conditions and requirements, including taking into account social, economic, and ecological considerations • carry out fairly complex tasks for which there are no available procedures and methods • solve problems requiring abstraction • use technical information from a variety of sources in problem solving • integrate several components into complex solutions • propose system improvements • design fairly complex procedures and products • solve problems requiring broad theoretical knowledge, use research methods and simple scientific principles • present own work, products or services and justify them in the face of criticism, discuss problems and find solutions, communicate effectively and present convincing arguments • direct a group carrying out complex technical activities in unforeseen conditions
Level 7	• be familiar with documentation, norms, standards and regulations in use in the field to the extent that he or she can explain them to others in standard and non-standard

	Description of competences
	situations and evaluate whether there is a need for changes in these norms and documents • plan procedures, methods and the use of tools and materials, etc. according to desired results • evaluate the quality of his or her products or services, and those of others. • carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them • identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • identify social, economic and environmental aspects of any problems which arise • analyse the causes and context of unusual behaviour from individuals and objects in the workplace, draw conclusions and formulate proposals • analyse complex systems, phenomena and processes • evaluate the relevance of technical information and findings from other scientific fields • evaluate the results of the works of others from the point of view of applying them in own work • carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations • design procedures and methods for the solution of complex problems and coordinate their implementation • solve problems requiring abstraction and generalisation • use technical information from a variety of sources and findings from various scientific fields in problem solving • integrate several components into complex solutions • propose fundamental systemic changes • plan and implement new, complex procedures and products • solve problems requiring broad and highly specialised theoretical knowledge, use research methods and simple scientific principles • present own work, products or services, design new procedures, justify them in the face of criticism, lead discussions of complicated problems and find solutions, communicate effectively and present convincing arguments • organise and plan complex processes carried out by multiple groups in unforeseen conditions, including strategic decision-making
Level 8	• qualification level 7, and: • solve problems requiring innovations of importance to the whole field • contribute to the dissemination of the results of original research • develop theories and methods for the most demanding creative activities, including scientific research and development • present proposed procedures and research results and defend them in the face of criticism, and lead discussions on research and scientific problems • direct wide-ranging research and development activities

Source: Czech National Institute for Education, 2015.

A2.1.4. Denmark

Main NQF level descriptor elements in Denmark

Level descriptor elements		
Knowledge	**Skills**	**Competences**
• **type of knowledge** (about theory or about practice, of a subject or a field or within a profession) • **complexity of knowledge** (the degree of complexity and predictability) • **understanding** (the ability to place one's knowledge in a context)	• **type of skills** (practical, cognitive, creative or communicative) • **complexity of problem solving** (and complexity of task) • **communication** (complexity of message, type of target group, instruments)	• **space for action** (the type of work and/or study-related contexts, the degree of unpredictability and changeability of these contexts) • **cooperation and responsibility** • **learning**

Descriptors for levels 1 to 8

	Knowledge	Skills	Competences
Level 1	• must have basic knowledge within general subjects • must have basic knowledge about natural, cultural, social and political matters	• must possess basic linguistic, numerical, practical and creative skills • must be able to utilise different basic methods of work • must be able to evaluate own work • must be able to present the results of own work	• must be able to take personal decisions and act in simple, clear situations • must be able to work independently with predefined problems • must have a desire to learn and be able to enter into partly open learning situations under supervision
Level 2	• must have basic knowledge in general subjects or specific areas within an occupational area or field of study • must have understanding of the basic conditions and mechanisms of the labour market	• must be able to apply fundamental methods and tools for solving simple tasks while observing relevant regulations • must be able to correct for faults or deviations from a plan or standard • must be able to present and discuss the results of own work	• must be able to take personal decisions and act in simple, clear situations • must be able to undertake a certain amount of responsibility for the development of forms of work and to enter into uncomplicated group processes • must be able to enter into partly open learning situations and seek guidance and supervision
Level 3	• must have knowledge of basic methodology and norms within an occupational area or	• must be able to perform practical work assignments within an occupational area or field of study	• must be able to take responsibility for defined work processes

	Knowledge	Skills	Competences
	field of study • must have understanding of own possibilities for influence on the labour market and in society	• must be able to solve professional problems • must be able to search for and assess information relevant to a practical work assignment within an occupational area or field of study • must be able to use professional terminology in communications with colleagues, fellow students and users	• must be able to enter into interdisciplinary cooperation within the practice of an occupation or field of study • must be able to participate actively in learning situations within an occupation or field of study
Level 4	• must have knowledge of concepts, principles and processes within the practice of an occupation or field of study or in general subjects • must have understanding of the relationships between professional problems and social/international conditions	• must be able to select and apply relevant tools, methodologies, techniques and materials within an occupational area or a field of study • must be able to identify a practical and/or theoretical problem • must be able to assess the quality of own and others' work in relation to a given standard. • must be able to utilise the terminology of an occupation or field of study in communication with collaboration partners and users	• must be able to take responsibility for work processes in normally predictable work or study situations • must be able to plan and take responsibility for own and joint work processes and results • must be able to search for further education and training and professional development in structured learning environments
Level 5	• must have knowledge of practice, and application of methodology and theory in an occupational area or field of study • must have understanding of practice and/or the most important theories and methodologies used and be able to understand the utilisation of these within an occupation	• must be able to utilise and combine a comprehensive set of skills connected with the practice and work processes of an occupation or field of study • must be able to assess practice-related problems and adjust work procedures and processes • must be able to communicate practice-related problems and possible solutions to collaboration partners and users	• must be able to enter into development-oriented and/or interdisciplinary work processes • must be able to undertake defined management and planning functions in relation to the practice of an occupation or field of study • must be able to identify and develop own possibilities for continued further education and training in different learning environments
Level 6	• must have knowledge of theory, methodology and practice within a profession or one or more fields of study • must be able to understand and reflect on theories, methodology and practice	• must be able to apply the methodologies and tools of one or more fields of study and to apply skills related to work within the field/fields of study or a profession • must be able to assess theoretical and practical problems and to substantiate and select relevant solutions • must be able to communicate professional issues and solutions to peers and non-specialists and to collaboration partners and users	• must be able to handle complex and development-oriented situations in study or work contexts • must be able to participate independently in professional and interdisciplinary collaboration with a professional approach • must be able to identify own learning needs and to organise own learning in different learning environments
Level 7	• must have knowledge within one or more fields of study that, in selected fields, is based on the highest international research	• must master the scientific methodologies and tools of the field/fields of study as well as master general skills related to work within the field/fields of study	• must be able to manage work and development situations that are complex, unpredictable and require

	Knowledge	Skills	Competences
	within a field of study • must be able to understand and, on a scientific basis, reflect on the knowledge of the field/fields of study and be able to identify scientific issues	• must be able to assess and select from among the scientific theories, methodologies, tools and general skills of the field/fields of study and to set up new models of analysis and problem solving on a scientific basis • must be able to communicate research-based knowledge and discuss professional and scientific issues with both academic peers and non-specialists	new solutions • must be able independently to initiate and implement professional and interdisciplinary cooperation and take on professional responsibility • must be able independently to take responsibility for own professional development and specialisation
Level 8	• must have knowledge at the highest international level within the field of research • must have made a significant contribution to the development of new knowledge and understanding in the field of research and on the basis of scientific studies	• must master the scientific theories, methods and tools as well as other skills connected with research and development within the area • must be able to analyse, evaluate and develop new ideas, including designing and developing new techniques and skills in the field of study • must be able to participate in international discussions in the field of study and to disseminate research results and progress to a wider public	• must be able to organise and conduct research and development tasks in complex and unpredictable contexts • must be able independently to initiate and enter into national and international cooperation on research and development with scientific integrity • must be able independently to initiate research and development projects and, through this, generate new knowledge and new skills that develop the field of research

Source: Danish Evaluation Institute, 2011.

A2.1.5. Germany

An overarching competence descriptor for levels 1 to 8 and four main characteristics define levels in the German qualifications framework.

Level indicator			
Structure of requirements			
Professional competence		**Personal competence**	
Knowledge	**Skills**	**Social competence**	**Autonomy**
• depth • breadth	• instrumental skills • systemic skills • judgment	• team/leadership skills • involvement • communication	• autonomy/responsibility • reflectiveness • learning competence

Descriptors for levels 1 to 8

	Professional competence		Personal competence	
Level 1	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for the fulfilment of simple requirements within a clear and stably structured field of study or work. Fulfilment of tasks takes place under supervision.				
	Be in possession of elementary general knowledge. Have an initial insight into a field of study or work.	Be in possession of cognitive and practical skills required to carry out simple tasks in accordance with stipulated rules and to assess the results of such tasks. Establish elementary correlations.	Learn or work together with others, obtain and exchange information verbally and in writing.	Learn or work under supervision. Appraise own actions and the actions of others and accept learning guidance.
	Professional competence		**Personal competence**	
Level 2	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for the professional fulfilment of basic requirements within a clear and stably structured field of study or work. Fulfilment of tasks takes place largely under supervision.				
	Be in possession of basic general knowledge and basic professional knowledge within a field of study or work.	Be in possession of basic cognitive and practical skills required to carry out tasks within a field of study or work, assess the results of such tasks in accordance with stipulated criteria and establish correlations.	Work within a group. Accept and express general feedback and criticism. Act and react in accordance with the given situation with regard to verbal and written communication.	Learn or work in a responsible manner and largely under supervision within familiar and stable contexts. Appraise own actions and the actions of others. Use stipulated learning guides and request learning guidance.

	Professional competence		Personal competence	
Level 3	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for the autonomous fulfilment of technical requirements within a field of study or field of occupational activity which remains clear while being openly structured in some areas.				
	Be in possession of extended general knowledge or extended professional knowledge within a field of study or field of occupational activity.	Be in possession of a spectrum of cognitive and practical skills for the planning and processing of technical tasks within a field of study or field of occupational activity. Assess results in accordance with criteria which are largely stipulated, provide simple transfers of methods and results.	Work within a group and occasionally offer support. Help shape the learning or working environment, present processes and results to the appropriate recipients of such information.	Learn or work autonomously and responsibly including within contexts which are less familiar. Appraise own actions and the actions of others. Request learning guidance and select various learning aids.
	Professional competence		**Personal competence**	
Level 4	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for the autonomous planning and processing of technical tasks assigned within a comprehensive field of study or field of occupational activity subject to change.				
	Be in possession of deeper general knowledge or theoretical professional knowledge within a field of study or field of occupational activity.	Be in possession of a broad spectrum of cognitive and practical skills which facilitate autonomous preparation of tasks and problem solving and the assessment of work results and processes with consideration of alternative courses of action and reciprocal effects with neighbouring areas. Provide transfers of methods and solutions	Help shape the work within a group and the learning or working environment of such a group and offer continuous support. Justify processes and results. Provide comprehensive communication on facts and circumstances	Set own learning and work objectives, reflect on and assess such objectives and take responsibility for them.
	Professional competence		**Personal competence**	
Level 5	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for the autonomous planning and processing of comprehensive technical tasks assigned within a complex and specialised field of study or field of occupational activity subject to change.				
	Be in possession of integrated professional knowledge within a field of study or integrated occupational knowledge within a field of activity. This also includes deeper, theoretical professional knowledge. Be familiar with the scope and limitations of the field of study or field of occupational activity.	Be in possession of an extremely broad spectrum of specialised, cognitive and practical skills. Plan work processes across work areas and assess such processes with comprehensive consideration of alternative courses of action and reciprocal effects with neighbouring areas. Provide comprehensive transfers of methods and solutions.	Plan and structure work processes in a cooperative manner, including within heterogeneous groups; instruct others and provide well-founded learning guidance. Present complex facts and circumstances extending across professional areas in a targeted manner to the appropriate recipients of such information. Act in an anticipatory manner in considering the interests and requirements of recipients.	Reflect on and assess own learning objectives and learning objectives set externally, undertake self-directed pursuit of and assume responsibility for such objectives, draw consequences for work processes within the team.

	Professional competence		Personal competence	
Level 6	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for the planning, the processing and the evaluating of comprehensive technical tasks and problems set, and be in possession of competences for autonomous management of processes within subareas of an academic subject or within a field of occupational activity. The structure of requirements is characterised by complexity and frequent changes.				
	Be in possession of broad and integrated knowledge including knowledge of basic academic principles and the practical application of an academic subject as well as a critical understanding of the most important theories and methods (corresponding to level 1 – bachelor level – of the qualifications framework for German higher education qualifications) **or** be in possession of broad and integrated occupational knowledge including current technical developments. Be in possession of knowledge for the further development of an academic subject or of a field of occupational activity. Be in possession of relevant knowledge at interfaces to other areas.	Be in possession of an extremely broad spectrum of methods for the processing of complex problems within an academic subject (corresponding to level 1 – bachelor level – of the qualifications framework for German higher education qualifications), further fields of study **or** field of occupational activity. Draw up new solutions and assess such solutions including with consideration to various criteria, even in circumstances where requirements are subject to frequent change.	Assume responsibility in working within expert teams **or** show responsibility in leading ([37]) groups or organisations. Instruct the technical development of others and act in an anticipatory manner in dealing with problems within the team. Present experts with arguments for and solutions to complex professionally related problems and work in conjunction with such experts on further development.	Define, reflect on and assess objectives for learning and work processes and structure learning and work processes autonomously and sustainably.

([37]) This encompasses companies, government authorities or non-profit making organisations.

	Professional competence		Personal competence	
Level 7	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for the processing of new and complex professional tasks and problems set, and be in possession of competences for autonomous management of processes within an academic subject or within a strategically oriented field of occupational activity. The structure of requirements is characterised by frequent and unpredictable changes.				
	Be in possession of comprehensive, detailed, specialist and state-of-the art knowledge in an academic subject (corresponding to level 2 – master level – of the qualifications framework for German higher education qualifications) **or** be in possession of comprehensive occupational knowledge in a strategically oriented field of occupational activity. Be in possession of extended knowledge in adjoining areas.	Be in possession of specialised technical or design concept skills relating to the solution of strategic problems in an academic subject (corresponding to level 2 – master level – of the qualifications framework for German higher education qualifications) **or** in a field of occupational activity. Consider alternatives even in circumstances where information is incomplete. Develop and use new ideas or procedures and assess such ideas and procedures with consideration of various assessment criteria	Assume responsibility for leading groups or organisations within the scope of complex tasks set and present the results of the work of such groups or organisations. Promote the technical development of others in a targeted manner. Lead divisionally specific and cross-divisional debates.	Define objectives for new applications or research-oriented tasks reflecting on possible societal, economic and cultural implications, deploy appropriate means and tap autonomously into own knowledge for the purpose.

	Professional competence		Personal competence	
Level 8	**Knowledge**	**Skills**	**Social competence**	**Autonomy**
Be in possession of competences for obtaining research findings in an academic subject or for the development of innovative solutions and procedures within a field of occupational activity. The structure of requirements is characterised by novel and unclear problem situations.				
	Be in possession of comprehensive, specialised, systematic state-of-the art knowledge in a research discipline and contribute towards the expansion of knowledge within the specialist discipline (corresponding to level 3 – doctorate level – of the qualifications framework for German higher education qualifications) **or** be in possession of comprehensive occupational knowledge in a strategically and innovation-oriented field of occupational activity. Be in possession of appropriate knowledge at the interfaces of adjoining areas.	Be in possession of comprehensively developed skills relating to the identification and solution of novel problems set in the areas of research, development or innovation within a specialised academic subject (corresponding to level 3 – doctorate level – of the qualifications framework for German higher education qualifications) **or** in a field of occupational activity. Also design, implement, manage, reflect on and evaluate innovative processes including in cross-activity areas. Assess new ideas and procedures.	Lead groups or organisations from a position of responsibility in complex or interdisciplinary tasks while activating the areas of potential within such groups or organisations. Promote the professional development of others in a targeted and sustained manner. Lead cross-specialist debates and introduce innovative contributions to specialist professional discussions including in international contexts.	Define objectives for new complex applications or research-oriented tasks reflecting on possible societal, economic and cultural implications, select appropriate means and develop new ideas and processes

Source: German Federal Ministry of Education and Research, 2013a; 2013b.

A2.1.6. Estonia

Main NQF level descriptor elements in Estonia

Level descriptor elements		
Knowledge	**Skills**	**Responsibility and autonomy**
• theoretical • factual	• **cognitive:** use of logical, intuitive and creative thinking • **practical:** manual dexterity and use of methods, materials, tools and instruments	scope of responsibility and autonomy

Descriptors for levels 1 to 8

	Knowledge	Skills	Scope of responsibility and autonomy activity
Level 1	basic general knowledge	basic skills required to carry out simple tasks	work or study under direct supervision in a structured context
Level 2	basic factual knowledge of a field of work or study	basic cognitive and practical skills required to use relevant information to carry out tasks and to solve routine problems using simple rules and tools	work or study under supervision with some autonomy
Level 3	knowledge of facts, principles, processes and general concepts, in a field of work or study	a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems
Level 4	factual and theoretical knowledge in broad contexts within a field of work or study	a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	• exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change • supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities

	Knowledge	Skills	Scope of responsibility and autonomy activity
Level 5	specialised factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	• exercise management and supervision in contexts of work or study activities where there is unpredictable change • review and develop performance of self and others
Level 6	advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	• manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts. • take responsibility for managing the professional development of individuals and groups
Level 7	• highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research • critical awareness of knowledge issues in a field and at the interface between different fields	specialised problem-solving skills required in research and/or innovation to develop new knowledge and procedures and to integrate knowledge from different fields	• manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches • take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8	knowledge at the most advanced frontier of a field of work or study and at the interface between fields	the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts, including research

Source: Estonian Ministry of Education and Research, 2008; Estonian Qualifications Authority, 2016.

A2.1.7. Ireland

The learning outcomes descriptors are broken down into eight knowledge, skills and competence sub-strands in a 10-level framework in Ireland.

Main NQF level descriptor elements in Ireland

Level descriptor elements		
Knowledge	**Know-how and skills**	**Competence**
• breadth • kind	• range • selectivity	• context • role • learning to learn • insight

Descriptors for levels 1 to 10

	Knowledge breadth	Knowledge kind	Know-how and skill range	Know-how and skill selectivity	Competence context	Competence role	Competence learning to learn	Competence insight
Level 1	elementary knowledge	demonstrable by recognition or recall	demonstrate basic practical skills, and carry out directed activity using basic tools	perform processes that are repetitive and predictable	act in closely defined and highly structured contexts	act in a limited range of roles	learn to sequence learning tasks; learn to access and use a range of learning resources.	begin to demonstrate awareness of independent role for self

	Knowledge breadth	Knowledge kind	Know-how and skill range	Know-how and skill selectivity	Competence context	Competence role	Competence learning to learn	Competence insight
Level 2	knowledge that is narrow in range	concrete in reference and basic in comprehension	demonstrate limited range of basic practical skills, including the use of relevant tools	perform a sequence of routine tasks given clear direction	act in a limited range of predictable and structured contexts	act in a range of roles under direction	learn to learn in a disciplined manner in a well-structured and supervised environment	demonstrate awareness of independent role for self
Level 3	knowledge moderately broad in range	mainly concrete in reference and with some comprehension of relationship between knowledge elements	demonstrate a limited range of practical and cognitive skills and tools	select from a limited range of varied procedures and apply known solutions to a limited range of predictable problems	act within a limited range of contexts	act under direction with limited autonomy; function within familiar, homogenous groups	learn to learn within a managed environment	assume limited responsibility for consistency of self-understanding and behaviour
Level 4	broad range of knowledge	mainly concrete in reference and with some elements of abstraction or theory	demonstrate a moderate range of practical and cognitive skills and tools	select from a range of procedures and apply known solutions to a variety of predictable problems	act in familiar and unfamiliar contexts	act with considerable amount of responsibility and autonomy	learn to take responsibility for own learning within a supervised environment	assume partial responsibility for consistency of self-understanding and behaviour

	Knowledge breadth	Knowledge kind	Know-how and skill range	Know-how and skill selectivity	Competence context	Competence role	Competence learning to learn	Competence insight
Level 5	broad range of knowledge	some theoretical concepts and abstract thinking, with significant depth in some areas	demonstrate a broad range of specialised skills and tools	evaluate and use information to plan and develop investigative strategies and to determine solutions to varied unfamiliar problems	act in a range of varied and specific contexts, taking responsibility for the nature and quality of outputs; identify and apply skill and knowledge to a wide variety of contexts	exercise some initiative and independence in carrying out defined activities; join and function within multiple, complex and heterogeneous groups	learn to take responsibility for own learning within a managed environment	assume full responsibility for consistency of self-understanding and behaviour
Level 6	specialised knowledge of a broad area	some theoretical concepts and abstract thinking, with significant underpinning theory	demonstrate comprehensive range of specialised skills and tools	formulate responses to well-defined abstract problems	act in a range of varied and specific contexts involving creative and non-routine activities; transfer and apply theoretical concepts and/or technical or creative skills to a range of contexts	exercise substantial personal autonomy and often take responsibility for the work of others and/or for allocation of resources; form, and function within multiple complex and heterogeneous groups	learn to evaluate own learning and identify needs within a structured learning environment; assist others in identifying learning needs	express an internalised, personal world view, reflecting engagement with others

	Knowledge breadth	Knowledge kind	Know-how and skill range	Know-how and skill selectivity	Competence context	Competence role	Competence learning to learn	Competence insight
Level 7	specialised knowledge across a variety of areas	recognition of limitations of current knowledge and familiarity with sources of new knowledge; integration of concepts across a variety of areas	demonstrate specialised technical, creative or conceptual skills and tools across an area of study	exercise appropriate judgement in planning, design, technical and/or supervisory functions related to products, services, operations or processes	utilise diagnostic and creative skills in a range of functions in a wide variety of contexts	accept accountability for determining and achieving personal and/or group outcomes; take significant or supervisory responsibility for the work of others in defined areas of work	take initiative to identify and address learning needs and interact effectively in a learning group	express an internalised, personal world view, manifesting solidarity with others
Level 8	an understandin g of the theory, concepts and methods pertaining to a field (or fields) of learning	detailed knowledge and understanding in one or more specialised areas, some of it at the current boundaries of the field(s)	demonstrate mastery of a complex and specialised area of skills and tools; use and modify advanced skills and tools to conduct closely guided research, professional or advanced technical activity	exercise appropriate judgement in a number of complex planning, design, technical and/or management functions related to products, services, operations or processes, including resourcing	use advanced skills to conduct research, or advanced technical or professional activity, accepting accountability for all related decision-making; transfer and apply diagnostic and creative skills in a range of contexts	act effectively under guidance in a peer relationship with qualified practitioners; lead multiple, complex and heterogeneous groups	learn to act in variable and unfamiliar learning contexts; learn to manage learning tasks independently, professionally and ethically	express a comprehensive, internalised, personal world view, manifesting solidarity with others
Level 9	a systematic understandin g of knowledge, at, or informed by, the forefront	a critical awareness of current problems and/or new insights, generally	demonstrate a range of standard and specialised research or equivalent tools and	select from complex and advanced skills across a field of learning; develop new skills to a high	act in a wide and often unpredictable variety of professional levels and ill-defined	take significant responsibility for the work of individuals and groups; lead and initiate activity	learn to self-evaluate and take responsibility for continuing academic/profession al development	scrutinise and reflect on social norms and relationships and act to change them

	Knowledge breadth	Knowledge kind	Know-how and skill range	Know-how and skill selectivity	Competence context	Competence role	Competence learning to learn	Competence insight
	of a field of learning	informed by the forefront of a field of learning	techniques of enquiry	level, including novel and emerging techniques	contexts			
Level 10	a systematic acquisition and understanding of a substantial body of knowledge which is at the forefront of a field of learning	the creation and interpretation of new knowledge, through original research, or other advanced scholarship, of a quality to satisfy review by peers	demonstrate a significant range of the principal skills, techniques, tools, practices and/or materials which are associated with a field of learning; develop new skills, techniques, tools, practices and/or materials	respond to abstract problems that expand and redefine existing procedural knowledge	exercise personal responsibility and largely autonomous initiative in complex and unpredictable situations, in professional or equivalent contexts	communicate results of research and innovation to peers; engage in critical dialogue; lead and originate complex social processes	learn to critique the broader implications of applying knowledge to particular contexts	scrutinise and reflect on social norms and relationships and lead action to change them

Source: National Qualifications Authority of Ireland, 2003; 2009.

A2.1.8. Greece

Main NQF level descriptor elements in Greece

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• factual and/or • theoretical	• cognitive • practical	• autonomy • responsibility

Descriptors for levels 1 to 8

	A learner achieving a qualification at a particular level…
Level 1	• has acquired basic general knowledge related to the working environment that may serve as input into lifelong learning paths • can apply basic knowledge and perform a specific range of simple tasks; has basic and recurring social skills • can perform simple and repetitive tasks by applying basic knowledge and skills under direct supervision in a structured context
Level 2	• has acquired basic general knowledge related to a field of work or study that allow them to understand the procedures for implementing basic tasks and instructions • can apply basic knowledge and perform a variety of complex tasks in a field of work or study; has communication skills • can perform tasks in a specific field of work or study under limited supervision and/or with some autonomy in a structured context
Level 3	• has acquired basic general knowledge that allows them to understand the relationship of theoretical knowledge and information within a field of work or study; understands the components and procedures appropriate to complex tasks and instructions • can demonstrate broad cognitive and practical skill in successful execution of complex tasks both in familiar and unfamiliar contexts; has communication skills and problem-solving capabilities through selecting and applying basic methodologies, tools, materials and information • can perform tasks autonomously in a particular field of work or study; has the ability to adjust their behaviour depending on the needs of problem solving; takes initiatives in specified fields of work or study and acts under supervision in implementing emergency procedures of quality control
Level 4	• has acquired a wide range of theoretical knowledge and intelligence analysis allowing them to understand the field of work or study and apply data and processes in a general context • can use fluently the knowledge and ability to apply a range of techniques and specialised skills in a field of work or study; has communication skills at the level of theoretical and technical information and can find solutions to specific problems in a field of work or study • may perform independently qualitative and quantitative tasks in a specific field of work or study that requires professional competence; has the ability to oversee the quality and quantity of work of other people with responsibility and autonomy; demonstrates an increased level of key competences that can serve as the basis for studying higher education
Level 5	• demonstrates comprehensive, specialised, factual and theoretical knowledge within a field of work or study and is aware of the limits of knowledge; • holds a wide range of cognitive and practical skills required to find creative solutions to abstract problems • can manage and supervise, in the context of a specific task or learning process, in which unforeseen changes can occur; can revise and develop both their personal performance and that of others
Level 6	• has advanced knowledge of a field of work or study, involving critical understanding of theories and principles • possesses advanced skills and has the ability to demonstrate the virtuosity and innovation required to solve complex and unpredictable problems in a specialised field of work or study

	A learner achieving a qualification at a particular level…
	• can manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; can assume responsibility for managing the professional development of individuals and groups
Level 7	• has highly specialised knowledge, some of which is cutting-edge, in a field of work or study and which is the basis for original thinking; has a critical awareness of knowledge issues in a field and at the interface of different fields • holds specialised problem-solving skills required in research and/or innovation to develop new knowledge and procedures and to integrate knowledge from different fields • can manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; can take responsibility for contributing to professional knowledge and practices and/or for the performance evaluation of strategy groups
Level 8	• has knowledge at the most advanced levels of a field of work or study and at the interface with other fields • has acquired very advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation for enlarging and redefining existing knowledge or existing professional practice • demonstrates substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Source: EOPPEP (Greek National Organisation for the Certification of Qualifications and Vocational Guidance), 2016.

A2.1.9. Spain

Main level descriptor elements of the Spanish qualifications framework (MECU, *Marco Español de Cualificaciones*) ([38])

Knowledge Described as theoretical and/or practical:	Skills and abilities Described as cognitive and practical:	Competence Described as autonomy and responsibility:
• to have or understand knowledge	• to apply knowledge • ability to communicate in various languages • analysis ability	• learning ability • attitudes

Draft descriptors for MECU levels 1 to 8 ([39])

	Knowledge	Skills and abilities	Competence
Level 1	• enough basic knowledge to meet the needs arisen in everyday life	• to read, write and apply the basic calculation techniques • basic skills necessary to carry out ordinary tasks • basic communication that makes it possible to express and understand simple messages and to manage everyday situations • analysis of the consequences of one's own actions in simple contexts	• work or study directly supervised in a structured context • adequate attitudes to manage everyday life, as well as to understand their environment

([38]) There is legal regulation with defined descriptors in place for every educational level taking into account, as reference, the EQF level descriptors. The Royal Decree No 1027/2011 (modified by Royal Decree No 96/2015 and Royal Decree No 22/2015) establishes the Spanish qualifications framework for higher education (*Marco Español de Cualificaciones para la Educación Superior*, MECES) with four levels in accordance with QF-EHEA and EQF levels 5, 6, 7 and 8. In the field of VET, the Royal Decree No 1147/2011 establishes the general regulation of VET and includes level descriptors in terms of competences and learning outcomes for levels 3, 4 and 5, informed by the EQF descriptors. Royal Decree No 126/2014 regulates the basic curriculum of primary education, including assessment standards and the Royal Decree No 1105/2014 regulates the basic curriculum for secondary education and baccalaureate.

([39]) Draft MECU level descriptors (October 2012).

	Knowledge	Skills and abilities	Competence
Level 2	• basic knowledge in a work field or in different study areas	• basic knowledge application to carry out simple tasks in a field of work or in everyday life • skills to solve simple problems in a specific work area • communication of knowledge, abilities, feelings and activities in simple contexts • basic use of new technological resources and communication in a field of work or in everyday life • introduction to communication by means of different artistic representations and expressions • analysis of the consequences of one's and others' actions in simple contexts	• supervised work or study with a certain degree of autonomy • responsibility regarding everyday situations that demand some analysis and assessment ability • effective attitude in all areas of personality and in relationships with others that makes coexistence easier and which is against violence and any kind of prejudices
Level 3	• general knowledge of facts, principles, processes and concepts in a work field or in different study areas, mainly linguistic, mathematical, natural environment, social, cultural and artistic	• application of general knowledge and the necessary skills to carry out tasks and to solve problems selecting and applying methods, tools, materials and general information in specific contexts • communication of knowledge, abilities, feelings and activities in relatively simple contexts. • basic use of new technological resources and in communication through different artistic representations and expressions in a work or study field • analysis and resolution of problems in a concrete context	• individual or team work or study taking responsibilities • adapting own behaviour to the circumstances in a responsible way to solve problems and to understand others
Level 4	• knowledge in wide contexts in various study areas or in a specialised professional field	• knowledge application to carry out a set of activities in defined and generally previewed contexts • skills to resolve generally predictable problems in the knowledge areas or a field of work • supervision of other people's everyday work taking some responsibility for the evaluation and improvement of work or study activities • to communicate knowledge, abilities, feelings and activities correctly in generally predictable contexts through different resources and forms of expression • analysis of the consequences of one's and others' actions in generally predictable contexts • analysis of concrete information needed to	• self-management of education in a study or professional field, with maturity to improve learning and training skills at higher levels • responsible attitudes towards education that will allow them realise the value of new possibilities and of carrying out activities independently • responsible attitude towards other people's work, enabling them critically to value new possibilities to make improvements • responsible attitude regarding the application of workplace risk prevention, their own and people's safety, work

	Knowledge	Skills and abilities	Competence
		assess and solve problems within their own study or professional field • finding creative solutions for problems in a study or professional field	quality and environmental protection where professional activity is carried out
Level 5	• specialised knowledge in a study or professional field, with critical comprehension for transferring, integrating and innovating knowledge	• advanced technological knowledge application and integration when defining and developing both predictable and unpredictable working procedures • management and supervision of the work techniques and outcomes, carried out by oneself and other people • to communicate knowledge, abilities, feelings and activities properly in predictable and unpredictable contexts • correct management of technological resources in a work or study field • analysis of the consequences of one's and other's actions in predictable and unpredictable contexts • analysis of varied and wide information, necessary for evaluating and solving problems within its study or professional field • search for creative and innovative solutions when solving problems in a study or professional field	• self-management of education in a study or professional field with the aim of making progress to higher training levels or of improving the application of new knowledge • autonomy and responsibility for carrying out predictable and unpredictable activities in a professional field, and in charge of supervising the activities of subordinate people • responsibility and autonomy so as to implement and supervise workplace risk prevention, people safety, work quality and protection of the environment where the professional activity is carried out

	Knowledge	Skills and abilities	Competence
Level 6	• specialised and advanced knowledge based on study and/or on the professional experience, including some knowledge in the vanguard of a study or work field	• application of knowledge in complex work contexts in a professional way • command and innovation qualities, necessary for solving complex and unforeseeable problems in a specialised work or study field • management of activities or complex technical or professional projects, assuming responsibilities for taking decisions in unforeseeable work or study contexts • communication and transfer of information, ideas, problems and solutions both to a specialised and to a non-specialised audience. • advanced use of technological resources in a specialised work or study field • preparation, argument defence and problem solutions within their work and study field • critical comprehension of theories and principles • synthesis and interpretation of significant data within their work or study field	• self-management of training in a professional field, with maturity enough for innovating in its application and making progress in learning and training at higher levels • responsible attitude towards work and training, making possible to assume responsibilities concerning the management of individuals and group professional development
Level 7	• highly specialised knowledge in the vanguard of a specific work or study field, laying the foundations of original thought or research	• application of achieved knowledge with a high level of creativity and autonomy • solution to wide and multidisciplinary problems related to their work or study field • solution to research or innovation problems, to develop new knowledge and procedures, and to integrate knowledge in different fields • management and change of complex and unforeseeable work or study contexts requiring new strategic approaches • conclusions communication and transfer – as well as knowledge and latest thinking supporting them – to specialised and non-specialised audience in a clear and non-ambiguous way • very advanced use of technological resources in a specialised work or study field • analysis and criticism in a specific field and at the point of articulation between different fields • integration of knowledge and formulation of complex opinions from incomplete or limited information, including reflections about social and ethical responsibilities linked to their knowledge and opinion application	• self-management of knowledge application and improvement to the point of being original when developing and implementing ideas and carrying out activities for advancing in the knowledge of a study or professional field • responsible attitude towards work and training, making it possible to develop supervision activities as a team in a completely autonomous way • ability to assume responsibilities concerning knowledge development and/or vocational practices and the supervision of teams strategic performance

	Knowledge	Skills and abilities	Competence
Level 8	• knowledge at the most advanced point of a study field or a specific study and at the articulation point between different fields • methods of advancing the knowledge related to a study or professional field	• scientific, technical or professional rigour, to conceive, design, put into practice and assume an essential process of knowledge • application of the most advanced and specialised techniques, in particular with regard to synthesis and assessment, necessary for solving critical problems in research and/or innovation and for increasing and redefining existing knowledge or vocational practices • communication with colleagues, with the academic or professional community as a whole and with society in general about the knowledge fields with a high level of depth and rigour • innovative use of technological resources in a specialised work or study field • critical analysis, with evaluation and synthesis of new and complex ideas at the highest level	• promotion, in academic and professional contexts, of the technological, social or cultural advance within a society based on knowledge • responsible and creative attitude towards the advance of the knowledge, making possible to develop and carry out activities as a team in an autonomous way • authority, innovation, autonomy, essential professional and academic integrity and continuous commitment, authorised according to the development of new ideas or processes in the vanguard of work or study contexts, including research

Source: Draft MECU level descriptors.

A2.1.10. France

Levels in the French national qualifications framework

	Level definition	Learning outcomes (Indications)
Level V	Personnel holding jobs normally requiring a level of training equivalent to that of the vocational studies certificate (BEP) or the certificate of vocational ability (CAP), and, by assimilation, the level one certificate of vocational training for adults (CFPA).	This level corresponds to full qualification for carrying out a specific activity with the ability to use the corresponding instruments and techniques. This activity mainly concerns execution work, which can be autonomous within the limits of the techniques involved.
Level IV	Personnel holding jobs at a supervisory highly skilled worker level and able to provide proof of a level of training equivalent to that of the vocational certificate (BP), technical certificate (BT), vocational baccalaureate or technological baccalaureate.	A level IV qualification involves a higher level of theoretical knowledge than the previous level. This activity concerns mainly technical work that can be executed autonomously and/or involve supervisory and coordination responsibilities.
Level III	Personnel holding jobs normally requiring a level of training equivalent to that of a diploma from a university institute of technology (DUT) or a higher technician certificate (BTS) or a certificate corresponding to the end of the first higher education cycle.	A level III qualification corresponds to higher levels of knowledge and abilities, but without involving mastery of the fundamental scientific principles for the fields concerned. The knowledge and abilities required enable the person concerned to assume, autonomously or independently, responsibilities concerning design and/or supervision and/or management.
Level II	Personnel holding jobs normally requiring a level of training comparable to that of a bachelor or master degree.	At this level, exercise of a salaried or independent vocational activity involves mastery of the fundamental scientific principles for the profession, generally leading to autonomy in exercising that activity.
Level I	Personnel holding jobs normally requiring a level of training above that of a master degree.	As well as confirmed knowledge of the fundamental scientific principles for a vocational activity, a level I qualification requires mastery of design or research processes.

Source: CNCP 1969; 2010

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A2.1.11. Croatia

Main NQF level descriptor elements in Croatia

Level descriptor elements		
Knowledge	**Skills**	**Autonomy and responsibility**
• factual • theoretical	• cognitive • practical • social	

Descriptors for levels 1 to 8

	Knowledge	Skills	Autonomy and responsibility
Level 1	comprehending basic general facts and concepts in simple and familiar everyday situations	**cognitive skills:** simple concrete logical thinking required to execute simple, clearly defined tasks in familiar situations **practical skills:** performing simple actions in familiar situations. **social skills:** following general rules of behaviour in familiar social contexts	**autonomy:** executing simple tasks under direct and constant professional supervision in familiar situations **responsibility:** taking responsibility for executing simple tasks in familiar situations
Level 2	comprehending basic facts and concepts in simple and familiar situations specific to a field of work and/or learning	**cognitive skills:** concrete logical thinking required to apply known facts and procedures in the course of execution of a series of simple connected tasks in familiar situations **practical skills:** performing actions and applying simple methods, instruments, tools and materials in familiar conditions **social skills:** realisation of simple communication and cooperation in interaction with other individuals in familiar social contexts	**autonomy:** executing simple tasks under direct and occasional supervision in familiar situations **responsibility:** taking responsibility for executing simple tasks and for establishing relationships with other individuals in familiar situations
Level 3	comprehending facts, concepts, procedures and principles important for a field of work and/or learning in partially familiar situations	**cognitive skills:** explaining, estimating, selecting and using important facts, concepts and procedures required to execute a series of complex, defined tasks or problems within a specific field of work and/or learning in familiar	**autonomy:** executing a set of complex tasks and adapting one's own behaviour to a set of given guidelines in familiar situations **responsibility:**

	Knowledge	Skills	Autonomy and responsibility
		situations **practical skills:** performing complex actions by applying a set of different simple methods, instruments, tools and materials in partially familiar conditions **social skills:** realisation of complex communication in interaction with other individuals and possibility of cooperation in a group in familiar social contexts	taking responsibility for executing a set of complex tasks in familiar situations
Level 4	analysing a wider spectrum of facts, concepts, procedures, principles and theories in a field of work and/or learning	**cognitive skills:** simple abstract logical thinking required to analyse available facts, concepts and procedures in the course of execution of a series of complex tasks in a field of work and/or learning in situations that are usually predictable, but are subject to change **practical skills:** performing a set of complex actions and applying complex methods, instruments, tools and materials (in executing a series of specific complex tasks) in situations that are usually predictable, but are subject to change **social skills:** realisation of complex communication in interactions with others and possibility of cooperation in a group in social contexts that are usually predictable, but are subject to change	**autonomy:** executing a set of complex tasks and adapting one's own behaviour to a set of given guidelines in situations that are usually predictable, but are subject to change **responsibility:** taking responsibility for evaluating and developing activities in situations that are usually predictable, but are subject to change
Level 5	analysing, synthesising and evaluating specialised facts, concepts, procedures, principles and theories in a field of work and/or learning, giving rise to an awareness of the frontier of knowledge	**cognitive skills:** interpreting, estimating, selecting and creatively applying different relevant facts, concepts and procedures required to generate solutions and for solving complex tasks or problems within a specific field of work and/or learning in partially unpredictable situations, as well as an ability to transfer knowledge to other areas and problems **practical skills:** performing complex actions and applying complex methods, instruments, tools and materials in partially unpredictable situations, developing instruments, tools and materials and adjusting simple methods	**autonomy:** taking part in the management of activities in partially unpredictable situations **responsibility:** taking responsibility for managing evaluation and for improving activities in partially unpredictable situations

	Knowledge	Skills	Autonomy and responsibility
		social skills: partial management of complex communication in interactions with others and establishing cooperation in a group in partially unpredictable social contexts.	
Level 6	evaluating specialised facts, concepts, procedures, principles and theories in a field of work and/or learning, including their critical comprehension	**cognitive skills:** collecting, interpreting, estimating, selecting and creatively applying different relevant facts, concepts and procedures required to generate solutions and for solving complex tasks or problems within a specialised field of work in unpredictable situations, as well as an ability to transfer knowledge to other areas and problems **practical skills:** performing complex activities and applying complex methods, instruments, tools and materials in unpredictable situations, developing instruments, tools and materials and adjusting complex methods **social skills:** managing complex communication, interactions with others and cooperation in different social groups in unpredictable social contexts	**autonomy:** managing professional projects in unpredictable situations **responsibility:** taking ethical and social responsibility for managing and evaluating professional individual and group development in unpredictable situations
Level 7	evaluating highly specialised knowledge in a field of work and/or learning, some of which is at the frontier of the field and can provide the basis for original thinking and scientific research as well as for integrating different fields of knowledge	**cognitive skills:** critical evaluation and creative thinking in solving new and complex problems, required as the basis for the development of new knowledge and the ability to integrate knowledge in unpredictable situations **practical skills:** performing complex activities and applying complex methods, instruments, tools and materials, developing instruments, tools and materials required in research and innovation processes and adjusting complex methods **social skills:** managing and leading a complex communication process, interactions with others and cooperation in different social groups in unpredictable social situations	**autonomy**: managing and leading development activities in unpredictable surrounding conditions and making decisions in uncertain conditions **responsibility:** taking personal and group responsibility for strategic decision-making and successful execution and completion of tasks in unpredictable conditions, as well as social and ethical responsibility during the execution of tasks and for their resulting consequences

	Knowledge	Skills	Autonomy and responsibility
Level 8	creating and evaluating new facts, concepts, procedures, principles and theories in a field of research that extends the frontier of knowledge	**cognitive skills:** using advanced, complex, original, highly specialised knowledge, skills, activities and procedures required for developing new knowledge and new methods as well as for integrating different fields **practical skills:** creating, evaluating and performing new proposed specialised activities and new methods, instruments, tools and materials **social skills:** creating and applying new social and generally acceptable forms of communication and cooperation in interaction with individuals and groups of different affiliations and different cultural and ethnical origin	**autonomy:** demonstrating personal, professional and ethical authority, managing scientific research activities and a commitment to development of new ideas and/or processes **responsibility:** taking ethical and social responsibility for successful execution of research, socially beneficial results and potential social consequences

Source: Croatian Ministry of Science, Education and Sports, 2013; Croatian Ministry of Science, Education and Sports and Agency for Science and Higher Education, 2014.

A2.1.12. Italy

Italy has recently adopted level descriptors of the comprehensive framework. A decree on the Italian NQF and level descriptors was signed by the Ministry of Labour, Ministry of Education and Regions and published in January 2018 in the Italian Official Gazette.

Main NQF level descriptor elements in Italy

Level descriptor elements		
Knowledge	**Skills**	**Responsibility and autonomy**
• theoretical and/or factual dimension of knowledge • extent and depth of knowledge • understanding and awareness of knowledge	• procedural, practical, technical, professional and context-specific skills • cognitive, social-interaction and activation skills	• responsibility • autonomy • context

Descriptors for levels 1 to 8

	Knowledge	Skills	Responsibility and autonomy
Level 1	general and basic knowledge, of limited extent, aimed at performing simple tasks in well-known and structured contexts	using know-how, materials and tools to perform simple tasks by involving basic cognitive, interpersonal and social skills typically: focus, interaction	performing given task in accordance with required parameters, under direct supervision of the activities, in a structured context
Level 2	general and basic knowledge, of moderate extent, aimed at performing simple tasks in different sequences	using know-how, materials and tools to perform simple tasks in different sequences, by involving cognitive, interpersonal and social skills, in a detailed range of context variables. typically: memory, participation	performing assigned tasks in compliance with established criteria, under supervision for the achievement of results, in a structured context characterised by a limited range of diversified circumstances

	Knowledge	Skills	Responsibility and autonomy
Level 3	a range of mainly general knowledge with conceptual elements, aimed at producing logical connections capability of understanding	applying a range of know-how, methods, materials and tools to achieve expected results by involving a set of cognitive, interpersonal, social and activation skills which facilitate adaptability in changeable contexts typically: understanding, cooperation, goal orientation	achieving expected results by ensuring their compliance and by identifying the most appropriate implementation methods, in a structured context characterised by mutable circumstances requiring own activity change
Level 4	a wide range of specialised knowledge in different fields, integrated by the factual and/or conceptual dimension capability of understanding	applying a range of know-how, methods, routines, procedures, materials and tools to solve problems, by involving a set of cognitive, interpersonal, social and activation skills needed to overcome increasing difficulties typically: problem solving, cooperation, multitasking	achieving goals by coordinating and integrating own and others results and activities, and by participating in both decision-making and implementation process, in a foreseeable context subject to unpredictable changes
Level 5	integrated, comprehensive, in-depth and specialised knowledge awareness of fields of knowledge	applying a wide range of methods, routines, procedures and tools, in a conscious and selective manner, also to modify them, by involving an extensive set of cognitive, interpersonal, social and activation skills needed to find unconventional technical solutions typically: analysis and evaluation, specialised and effective communication in a technical field, management of critical problems	ensuring compliance of goals, achieved autonomously and by others, by identifying and planning corrective and development measures, and by taking part in the implementation process, in a specific and complex context subject to frequent and unpredictable changes

	Knowledge	Skills	Responsibility and autonomy
Level 6	integrated and advanced knowledge in a specific field, transferable from one context to another critical awareness of theories and principles in a specific field	transferring, in different contexts, methods, routines and procedures needed to solve complex and unexpected problems, by involving advanced cognitive, interpersonal, social and activation skills needed to synthesise, review and address demands through innovative and creative solutions. typically: synthesis vision, negotiation and motivation, planning	overseeing objectives and processes of individuals and teams, by facilitating day-to-day management and conditions stability, by autonomously making decisions and negotiating both goals and implementation methods, in an undefined context subject to unpredictable changes
Level 7	integrated and highly specialised knowledge, some of which is cutting-edge in a given field critical awareness of theories and principles in multiple extent of knowledge	integrating and turning know-how, methods, practices and procedures, by involving specialised cognitive, interpersonal, social and activation skills needed to address development scenarios and to plan and implement new activities and procedures typically: systemic vision, planning, leadership, social interaction, complex relationship management	leading integration and turning processes, by implementing strategies and directing objectives and resources development, by autonomously making decisions on goals and implementation methods, in an undefined context subject to continuous changes and comparable to well-known variables
Level 8	integrated, proficient and cutting-edge knowledge in a specific field and in common extent of different fields critical awareness of theories and principles in multiple extent of knowledge	creating new knowledge, methods, routines and procedures, by involving accomplished cognitive, interpersonal, social and activation skills, needed to detect and react to the demand for innovation typically: strategic vision, creativity, innovation	promoting innovation and strategic development processes, by foreshadowing scenarios and solutions, and by assessing their possible effects, in an advanced context not comparable to known situations and settings

Source: Italian Ministry of Labour and Social Policies and Italian Ministry of Education, Universities and Research, 2018 [translation by Bastianelli, M. and Falzacappa, G. (national agency for active labour market policies (ANPAL) appointed as EQF national coordination point in Italy)].

A2.1.13. Cyprus

Main NQF level descriptor elements in Cyprus

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• **the type of knowledge involved:** knowledge about theory or knowledge about practice, knowledge of a subject or a field within a profession • **the complexity of this knowledge:** the degree of complexity and how predictable or unpredictable the situation is in which this knowledge is mastered • **understanding:** the ability to place one's knowledge in a context; understanding is expected when one explains something to others	• **the type of skill involved:** practical, cognitive or communicative • **the complexity of the problem solving:** the problem-solving skill is to be applied to the complexity of the task • **communication:** the communication that is required; the complexity of the message; to which target groups and with which instruments	• **space for action:** the type of work or study related contexts in which the knowledge and skills are brought into play, and the degree of unpredictability and changeability in these contexts • **cooperation and responsibility:** the ability to take responsibility for one's own work and the work of others, and the complexity of the cooperative situations in which one can engage • **learning**: the ability to take responsibility for one's own learning and that of others

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence	Learning outcomes
Level 1	• must have basic knowledge of general matters within the elementary school • knows and understands the steps needed to complete simple tasks and activities • understands basic tasks and instructions • must have basic knowledge about natural, cultural and political matters through textbooks	• must possess basic linguistic, numerical, practical and creative skills • must have basic repetitive communication skills • able to utilise different basic methods of work • able to evaluate own work • able to present the results of own work	• able to take personal decisions and act in simple, clear situations • able to work independently with predefined problems • must have a desire to learn and be able to enter into partly open learning situations under supervision • able to carry out activities with simple predefined timeframes under guidance	• basic understanding of textbooks • completes repetitive simple tasks and under a quality controlled system • communicating basic information in familiar contexts • ensures that the assigned tasks have been completed effectively • acquires and applies key competences to defined actions • able to take minimum responsibility for completing simple tasks/exercising limited autonomy
Level 2	• must have basic knowledge within general subjects • must have basic knowledge about natural, cultural, social and	• possesses basic linguistic, numerical, practical and creative skills • able to present the results of own	• able to work independently with predefined problems • acquires and applies basic key competences	• understands and uses knowledge for tasks and procedures • follows instructions

	Knowledge	Skills	Competence	Learning outcomes
	political matters • must be aware of and interpret types of information and ideas • must have relevant knowledge to accomplish specific actions for self and others	work • able to utilise different basic methods of work • ensures tasks are carried out effectively • able to evaluate own work	• able to carry out activities under limited supervision • must have desire to learn and be able to open learning situations, partly under supervision • able to take personal decisions and act in simple and clear situations	• communicates information which are based on unfamiliar contexts • is proactive and able to select information on specific tasks. • applies key competences to various actions • takes responsibility and exercises autonomy under a controlled system
Level 3	• must have knowledge of basic methodology, facts and procedures in the occupational area or field of study • understands the relevance of theoretical knowledge • selects and uses acquired relevant knowledge to accomplish specific actions for self and others • must understand own potential to influence society and labour market	• able to perform practical work assignments within an occupational area or field of study • demonstrates a range of developed skills to carry out complex tasks relating to profession or field of study • able to solve professional problems • able to search for/assess information relevant to practical work assignments within his/her occupational area or field of study • able to use professional terminology in communications with colleagues or other students	• able to enter into interdisciplinary cooperation within practice of an occupation or field of study • applies knowledge and skills to carry out tasks systematically • behaves in ways that solves problems by participating proactively in learning environments • able to participate actively in learning situations within an occupation or field of study • able to establish responsibility and autonomy under supervision • acquires key competences as a basis for lifelong learning. • able to take responsibility for delimited work processes	• knows information related to complex procedures in a field of work or study • follows instructions and carries out complex tasks systematically, sometimes in unpredictable contexts • communicates information in unfamiliar contexts • assesses, evaluates and interprets facts related to work or field of study. using basic problem-solving techniques • applies key competences as a basis for lifelong learning • takes responsibility for completing complex tasks • interacts with the immediate environment in defined actions for self and others
Level 4	• has knowledge of principles and broad theories in the field of work or study • selects and analyses theoretical knowledge in broad contexts of his/her field or work of study • applies facts and procedures relating to his/her field or work of study • has understanding of relations between professional problems in an international framework	• able to select and apply relevant tools, techniques, materials and methodologies in the field of work or study • able to identify practical or theoretical problems and solve them • able to assess the quality of others' and their own work based on given standards • able to utilise the terminology of his/her occupation or field of study in collaboration with	• able to take responsibility for own and joint work processes and outcomes • able to apply knowledge and skills to perform qualitative and quantitative tasks • able to search for professional development • able to demonstrate an advanced level of key competences at this level as a basis for higher education. • able to take responsibility for	• understands and analyses broad technical, practical and theoretical knowledge based on field of work and study • follows instructions and carries out defined theoretical and technical tasks • communicates technical and theoretical knowledge in a field of work or study • generates solutions to problems in a field of work or study • applies key competences to

	Knowledge	Skills	Competence	Learning outcomes
		colleagues	field of work or study	defined actions in a field of work or study • is autonomous and takes responsibility for defined tasks for self and others • completes complex tasks in a broad context under assured mechanisms
Level 5	• has understanding of practice and the most important theories and methodologies and confirms that he/she is able to understand the utilisation of this within a field of work • develops strategic and creative responses in researching solutions to well-defined problems • can apply judgement on knowledge of relevant social and ethical issues • has knowledge of practice and application of methodology and theory in field of work or study	• evaluates own learning and identifies learning needs to undertake further learning • able to evaluate practice-related problems and adjust work procedures • communicates solutions to practice-related problems to colleagues • able to convey ideas to peers, supervisors using qualitative and quantitative information • able to utilise set of skills connected with the practice on processes of field of work or study • able to identify the use of data to formulate responses to well-defined concrete and abstract problems	• able to identify possibilities for further education in different learning environments • manages projects independently that require problem-solving techniques • able to undertake defined management and planning functions in relation to the field of work or study • able to manage people and review their performance; team builder, team trainer • able to enter into development-oriented interdisciplinary work processes	• understands advanced text books which lead to further vocational or academic learning. good researcher in problems solutions • demonstrates management skills • manages problems and develops solutions in the field of work or study • can apply judgement on social and ethical issues • evaluates his/her performance and improves competences for further learning • effective and efficient management of projects and people
Level 6	• able to reflect on theories and practices of field of work or study by understanding the knowledge that builds on general education • can apply judgement on relevant social and ethical issues that arise in the field of work or study • knowledgeable on theory and practice in his/her field of work or study	• able to assess theoretical and practical problems and find solutions in field of work or study • constantly evaluates own learning and identifies learning needs • able to communicate professional issues and solutions to colleagues and subordinates (field of work) or partners (field of study) involving qualitative and quantitative information • able to apply methodologies using specific tools of one or	• able independently to participate in professional collaboration • able to handle complex tasks and situations in field of work or study • can be creative and take initiative in developing project management processes; team builder/team trainer • developed learning skills necessary to undertake further studies with high degree of autonomy • able to identify own learning	• has understanding of theoretical and practical knowledge in field of work or study • able to demonstrate innovative responses to field of work or study • able to communicate ideas and solutions to problems to various audiences (specialists/non specialist) using various techniques to sustain arguments • able to make professional judgments on ethical and social issues within the area of

	Knowledge	Skills	Competence	Learning outcomes
		more fields of study and to apply skills related to its field of work or study	needs and to organise own learning in various learning environments in field of work or study	specialisation, mastering problem solving • assess own learning and get specialisation in one or more competences for further learning • responsible for the management of creative and innovative projects in field of work or study
Level 7	• able to enhance knowledge associated with bachelor level • has knowledge within one or more fields of study based on international research • uses multidisciplinary theoretical and practical knowledge in the field of study • able to understand the scientific basis of his/her field and reflect on the knowledge identifying scientific issues	• able to assess and select among methodologies, theories, tools and skills in the field of study and develop new models of analysis and scientific based problem-solving techniques • good performer in critical evaluations; devises problem solutions in unfamiliar environments • able to communicate research-based knowledge and discuss professional and scientific issues with specialised and non-specialised audiences • develops new skills, techniques and leadership skills and is innovative in complex work study contexts • masters scientific methodologies, skills and tools of the field of study	• able independently to initiate and implement professional and interdisciplinary cooperation by taking professional responsibility • able to demonstrate ability to respond and manage in fast changing business environments • able independently to seek own professional development and specialisation • able to continue studies in a manner that may be largely self-directed or autonomous • able to manage work and development situations that are complex and require solutions out of the ordinary and use research based diagnosis	• has theoretical and practical knowledge which forms the basis of original research • manages people and projects effectively in a fast-changing business environment • able to communicate clearly knowledge and conclusions which are results of original research or experience or self-study to specialised and non-specialised audiences • solves problems in an unfamiliar environment with incomplete limited data and producing original research • assesses professional development, takes initiative to proceed with further self-directed study and further specialisation • accountable for original research within a business environment and adapting management of people operating in a specific environment
Level 8	• made a significant contribution to the development of new knowledge and understanding in a specific field of research based on scientific research • has knowledge at the highest international level in own field of research • able to redefine existing	• able to analyse, evaluate and develop new ideas by using new techniques, new tools and new skills in field of research • masters the scientific theories, methods and tools behind his/her research and development • able to participate in international discussions in the field of	• able independently to initiate and enter into national and international cooperation on research and development with scientific integrity • able independently to initiate research and development projects and develop new knowledge and skills through this	• high theoretical and practical expertise in a specialised field of knowledge which can contribute to ethical and social issues not only on a national but also on an international level • shows leadership and masters research in work or study in an innovative way

	Knowledge	Skills	Competence	Learning outcomes
	knowledge on field of research or practice	study/research and to disseminate research results	research in his/her field of study • able to organise research and development tasks in complex and unpredictable environments/ contexts	• communicates expertise to wide audiences and forums using national and international publications • demonstrates expertise in critical evaluations and analysis on issues with limited data in unfamiliar environments • committed to generating new ideas and innovations relating to technology, culture and society • responsible for the leadership of a number of specialised projects

Source: Cypriot Ministry of Education and Culture, 2016.

A2.1.14. Latvia

Main NQF level descriptor elements in Latvia

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• knowledge • comprehension	ability to apply: • knowledge, • communication, • general skills	• analysis • synthesis • assessment

Descriptors for levels 1 to 8

	Knowledge	Know-how and skills	Competence
Level 1	• able to demonstrate elementary knowledge, which manifests itself in recognition and recollection	• able to use elementary practical and cognitive skills, able to execute them under direct supervision using simple tools • able to perform simple tasks, which are repetitive in content and predictable	• able to perform tasks in a structured environment, to function in a limited context • is able to perform elementary tasks, following a model, able to master basic self-care skills
Level 2	• able to demonstrate basic knowledge in concrete subject syllabi	• able to use basic cognitive and practical skills, necessary to solve everyday problems by using relevant information, performing tasks and using simple rules and means • able to understand the consequences of one's own actions with regard to self and others	• able to perform tasks individually or in a group under supervision or semi-independently • able to participate in setting some learning objectives and planning the course of actions
Level 3	• able to demonstrate the knowledge of facts, principles, processes and general concepts and to use them in the field of studies and professional activities • able to understand various information about materials, technologies in the relevant field of studies or a specific profession	• able to use various cognitive and practical skills, necessary to perform tasks and to solve simple problems, by selecting and using basic methods, means, materials, information and technologies	• able to be aware of and assume responsibility for performing work or study tasks in a permanent and stable environment under the supervision of a specialist in the sector • when solving the tasks, is able to adjust one's actions to conditions and to be responsible for the result of work

	Knowledge	Know-how and skills	Competence
Level 4	• able to demonstrate comprehensive knowledge of facts, theories and causalities, needed for personal growth and development, civic participation, social integration and continuous education • able to comprehend in detail and demonstrate knowledge of diverse facts, principles, processes and concepts in a specific field of studies or professional activities in standard and non-standard situations • has good knowledge of technologies and methods for performing study or work tasks in the profession	• able to plan and organise work, using various methods, technologies (including information and communication technologies), equipment, tools and materials for performing tasks • able to find, assess and creatively use information for study or professional work tasks and problem solving • able to communicate in at least two languages both in writing and orally in a known and unknown context. • able to work independently in the profession, to learn and to improve professional qualifications. • able to cooperate	• is motivated for further career development, continuous education, lifelong learning in a knowledge-oriented democratic, multilingual and multicultural society in Europe and in the world • able to plan and perform study or work tasks in the profession individually, in a team or by managing the teamwork • able to assume responsibility for the quality and quantity of the outcomes of study or professional activities
Level 5	• able to demonstrate comprehensive and specialised knowledge and understanding of facts, theories, causalities and technologies of the professional field	• able, using an analytical approach, to perform practical tasks in the specific profession, demonstrate skills, allowing to find creative solutions to professional problems, to discuss and provide arguments regarding practical issues and solutions in the profession with colleagues, clients and management, able, with an appropriate degree of independence, to engage in further learning, improving one's competences • able to assess and improve one's own actions and those of other people, to work in cooperation with others, to plan and to organise work to perform concrete tasks in one's profession or to supervise such work activities, in which unpredictable changes are possible	• able to define, describe and analyse practical problems in one's profession, select the necessary information and use it for solving clearly defined problems, to participate in the development of the specific professional field, demonstrate understanding of the place of the profession in a broader social context

	Knowledge	Know-how and skills	Competence
Level 6	• able to demonstrate the basic and specialised knowledge typical of the specific branch of science or profession and a critical understanding of this knowledge, when a part of this knowledge complies with the highest level of achievement in this branch of science or profession. • able to demonstrate understanding of the most important concepts and causalities of the specific branch of science or professional field.	• able, using the mastered theoretical foundations and skills, to perform professional, artistic, innovative or research activity, to define and describe analytically information, problems and solutions in one's own branch of science or profession, to explain them and to provide arguments when discussing these with both specialist and non-specialists. is able to structure independently own learning, to guide one's own and one's subordinates further learning and improvement of professional qualification, to demonstrate a scientific approach to problem solving, to assume responsibility and take initiative when performing individual work, when working in a team or managing the work of other people, to take decisions and find creative solutions under changing or unclear conditions	• able to obtain, select and analyse information independently and to use it, to take decisions and solve problems in the branch of science or profession, demonstrate understanding of professional ethics, assess the impact of one's professional activities on the environment and society and participate in the development of the specific professional field.
Level 7	• able to demonstrate advanced or extensive knowledge and understanding, a part of which conforms with the most recent findings in the branch of science or professional field and which provide the basis for creative thinking or research, inter alia, working in the interface of various fields	• able to use independently theory, methods and problem-solving skills to perform research or artistic activities, or highly qualified professional functions. able to provide arguments when explaining or discussing complex or systemic aspects of the branch of science or professional field both with specialists and non-specialists • able to guide independently the improvement of one's own competences and specialisation, to assume responsibility for the results of staff and group work and analyse them, to perform business activities, innovations in the specific branch of science or profession, to perform work, research or further learning under complex or unpredictable conditions, if necessary, change them, using new approaches	• able to define independently, and critically analyse, complex professional problems, substantiate decisions and, if necessary, carry out additional analysis • able to integrate knowledge of various fields, contribute to the creation of new knowledge, research or the development of new professional working methods, demonstrate understanding and ethical responsibility for the possible impact of the scientific results or professional activity on environment and society

	Knowledge	Know-how and skills	Competence
Level 8	• able to demonstrate good knowledge and understanding of most topical scientific theories and insights, has mastered research methodology and contemporary research methods in the branch of science or professional field and in the interface of various fields	• able to assess and select independently appropriate methods for scientific research, has contributed to the expansion of the limits of knowledge or given new understanding of the existing knowledge, by carrying out original research of major scope, part of which is on the level of internationally cited publications • able to communicate both orally and in writing about one's own field of scientific activity (one's own branch) with wider research community and the general public • able to improve one's scientific qualification independently, by implementing scientific projects, attaining achievements meeting the international criteria of the branch of science, to manage research or development tasks in companies, institutions and organisations, requiring extensive research knowledge and skills	• able, by performing independent critical analysis, synthesis and assessment, to solve significant research or innovation tasks, to set independently research idea, to plan, structure and manage large-scale scientific projects, including projects in international context

Source: Latvian academic information centre and Ministry of Education and Science, 2012.

A2.1.15. Lithuania

The level descriptors of the Lithuanian qualifications framework use criteria characterising professional activities, as outlined in the first column of the table below. These level descriptors were legally adopted by a government resolution in 2011. An alternative, more detailed set of level descriptors, which are not legally embedded, are used as a working tool in developing qualifications and training programmes. In addition to the characteristics of activities, this more detailed set of level descriptors are also defined in terms of cognitive, functional, and general competences, as outlined in the second column of the table.

Main NQF level descriptor elements in Lithuania

	Parameters	
	Characteristics of activities	**Types of competences**
Criteria	• complexity of activities • autonomy of activities • variability of activities	• functional competences • cognitive competences • general competences

Descriptors for levels 1 to 8 adopted by Government Resolution No 986/2011

	Description of the qualification level
Level 1	• the qualification is intended for activities consisting of one or several simple specialised actions or operations. The activities require the ability to apply basic knowledge characteristics of the activities performed • the environment of the activities is clear, the activities are performed in line with detailed instructions, some cases require intense supervision, guidance and assistance • the situations, actions and operations constituting the activities are regular and constantly repetitive
Level 2	• the qualification covers activities consisting of actions and operations intended to solve simple problems. The activities performed require the application of the main factual knowledge characteristics of the activities • the activities performed require supervision, guidance and assistance • the activities and operations constituting the activities are regular
Level 3	• the qualification is intended for actions and operations in narrow areas of activities. The activities may include several or more specialised tasks that require the application of well-known and tested solutions. Performance of the activities involves the ability to apply their knowledge characteristics pertaining to the facts, principles and processes of the activity area • the activities are carried out autonomously, under the guidance of an employee of a higher qualification and subject to external performance quality control • the activity environment may require the ability to adapt to simple context changes

	Description of the qualification level
Level 4	• the qualification is intended for activities consisting of actions and operations in relatively broad areas. The activities are performed by carrying out several or more specialised activity tasks, solutions to which are not always tested or known. Performance of the activities involves the ability to apply factual and theoretical knowledge characteristics of a broad context related to the activity areas • the activities are performed autonomously, assuming responsibility for the quality of the procedures and outcomes of performance. With the acquisition of experience, the qualification allows the transfer of practical skills to the staff of lower qualifications as well as supervision of their activities • the activity environment requires the ability to adapt to developments predetermined by the context change, which is normally foreseeable
Level 5	• the qualification is intended for activities distinguished by integrated coordination of activity tasks in different activity areas. The activities include the evaluation of the competences of lower-qualification employees and training thereof. The activities require coordination of comprehensive knowledge of the activity area with general knowledge in dealing with various specialised activity tasks in several different activity areas • the employee performs the activities independently and is supervised only as regards the evaluation of results. The activity tasks are set by an employee of a higher qualification, who frequently grants the employee performing the activities discretion as to the choice of methods and measures to complete the tasks. The employee supervises the activities of lower-qualification staff, plans and assigns activity tasks, oversees the performance of the activities, provides consulting and verifies the performance quality • the technological and organisational requirements of the activities and their environment are constantly changing, the changes are often unforeseeable and may be related to new areas of activity
Level 6	• the qualification is intended for complex activities distinguished by a variety of tasks and their content. Different means and methods are employed when dealing with problems in various areas of professional activities. Therefore, the performance of activities requires the application of broad theoretical knowledge based on the results of new fundamental and applied research or necessary for the introduction of various innovations • activities are performed independently, selecting the methods for task completion and organising the work of the respective staff for the completion of the set tasks. Thus, the qualifications in this level include the ability to plan activities with respect to the set tasks, to analyse and record the activity results and to submit reports to activity coordinators, to modify activities based on the activity result analysis and specialist recommendations, and to carry out different project activities • the activity environment requires the ability to adapt to constant and normally unpredictable changes predetermined by the progress of knowledge and technologies in a specific professional sphere. The qualification allows the enhancement and extension of professional knowledge and, following self-assessment of the activities, enables independent learning (development of cognitive competences) as required by the changing professional activities
Level 7	• the qualification is intended for complex activities consisting of various interconnected tasks that may cover several related professional activities. Therefore, the performance of activities requires expert evaluation and application of the latest knowledge of the professional activities and similar or related areas, discovery of new facts in conducting applied research into the professional activities, and creative application of theoretical knowledge and research results • the activities are performed by independent setting of the tasks in the respective activity area and taking independent decisions aimed at enhancement and improvement. A peculiar characteristic is supervision of other employees' activities. Thus, the qualifications of this level cover the abilities to carry out applied research independently, provide consulting in the activity area, coordinate projects aimed at the improvement of the qualifications of others as well as introduction of innovations, and to analyse and present the activity results • due to the advancement of knowledge, technology and labour organisation in various activity areas, the activities of this level and their environment undergo intense changes, the developments are difficult to predict, and the activities consist of constantly changing combinations of tasks. Thus, the activity changes require the ability to adopt innovative solutions based on research results as well as the evaluation of alternative solutions and possible social and ethical consequences
Level 8	• the qualification is intended for activities of exceptional complexity, distinguished by the development of new knowledge, ideas, technologies, and work practices, methods and processes. Consequently, the activity demands the discovery of new knowledge in the activity areas on the basis of

	Description of the qualification level
	fundamental and applied research findings, integrating knowledge in different activity areas. The activities are characterised by strategic objectives that may cover several different activity areas or research subjects • the activities are strategically planned by assuming responsibility for the results and quality of other employees' activities and independent strategically important decision-making. The training and consulting of the specialists in the respective activity area is another characteristic. It is necessary to have the ability to adopt strategic decisions of public significance, to plan independently and conduct fundamental and/or applied research, to transfer the latest knowledge (to share know-how) to specialists in the respective area and to coordinate scientific and applied research projects • intense and unpredictable changes in the activities and their environment require readiness for constant developments, openness to innovation, a positive attitude towards the development of the organisation and society, the ability to address issues originally in the light of their context, and the ability to initiate and make changes in various areas of activity and public life

Source: Government of the Republic of Lithuania, 2010.

Detailed level descriptors (used as a working tool)

Level 1			
Criteria of activities	**Cognitive competences**	**Functional competences**	**General competences**
Complexity of activities: • activities consist of a single or several simple actions or operations • activities are narrowly specialised	Application of basic general knowledge and basic knowledge characteristics of the activities performed	Performance of simple, narrowly specialised actions or operations through the use of means necessary for the performance of specific activity tasks	Dealing with specific and basic problems that arise in performing activity tasks
Autonomy of activities: • activities are under constant supervision, with intense supervision, leadership and assistance required in some cases • activities are performed following detailed instruction	Using information supplied in the detailed written instructions and those provided orally by the supervising person	Performance of tasks assigned by the authorised person and following instructions provided.	Acceptance of information pertaining to the performance of tasks and solving simple problems as well as ability to provide feedback
Variability of activities: • situations, actions, and operations that constitute activities are regular and constantly repetitive • activity environment changes have no essential impact on actions and operations performed	No requirements for cognitive competences	No requirements for functional competences	No requirements for general competences

Level 2			
Criteria of activities	**Cognitive competences**	**Functional competences**	**General competences**
Complexity of activities: • activities consist of actions and operations intended to solve simple problems • activities are narrowly specialised	Application of basic general and activity-characteristic factual knowledge	Performance of simple actions or operations through the use of means necessary for the performance of specific activity tasks	Solving simple activity problems
Autonomy of activities: • activities are supervised. • activities are performed following instructions provided.	Using the information supplied in the written instructions and those provided orally by the supervising person	Performance of simple activities following the instructions provided	Acceptance of information pertaining to the performance of tasks and solving problems as well as ability to provide feedback
Variability of activities: • actions and operations that constitute activities are regular • activity environment changes have no essential impact on actions and operations performed	No requirements for cognitive competences	No requirements for functional competences	Adapting to changes with the help of the person in charge of supervising activities

Level 3			
Criteria of activities	**Cognitive competences**	**Functional competences**	**General competences**
Complexity of activities: • activities consist of actions and operations in narrow areas of activities. • activities comprise several specialised tasks that require the application of well-known and tested solutions. • activities are performed by using various methods, materials, and means.	Application of activity-characteristic knowledge regarding facts, principles and processes of the field of activities	Performance of various specialised activity actions and operations through the application of well-known and tested solutions, means, and instruments	Adapting to a variety of methods, materials, and means used to perform specific activities
Autonomy of activities: • separate activity tasks are solved autonomously, under leadership of a person with higher qualification • activity supervision is restricted to performance quality control	Using provided tasks, plans, simple data systems and oral instructions	Autonomous solving of various activity tasks and, if necessary, adjusting activity outcomes with regard to remarks and requirements presented during their assessment	Autonomous solving of standard activity problems Planning personal activities with regard to tasks provided and using the assistance of a person with higher qualification
Variability of activities: • activities and their environment are subject to change but changes are simple and easy to adjust to. • activities and environment changes are	Updating current knowledge of the field of activities, adapting to foreseeable activity environment changes	Updating current skills, adapting to specific foreseeable activity environment changes.	Autonomously adapting to simple changes in activity and its environment

predictable			
Level 4			
Criteria of activities	**Cognitive competences**	**Functional competences**	**General competences**
Complexity of activities: • activities consist of actions and operations in several fields of activities • activities are performed by implementing several or more specialised tasks, the possible solutions of which may not always be tested or known • activities may comprise passing on practical skills to lower qualification employees	Integration of factual and theoretical knowledge of the field of activities along with general education knowledge	Performance of actions and operations in several fields of activities through the application of various, not always well-known and tested solutions, means, and instruments	Adoption of solutions in activities performed within a variety of activities and contexts. Passing on the experience and skills to lower qualification persons.
Autonomy of activities • activities performed autonomously, taking the responsibility for the quality of activity performance procedures and outcomes • activities may comprise coordination and supervision of activities performed by lower qualification employees	Using specialised data systems, received and critically evaluated oral instructions	Autonomous solving of activity tasks by choosing methods, procedures, materials, and means of performing activities and controlling activity performance quality	Planning and organising own activities in team work and cooperation with higher qualification persons
Variability of activities: • activity changes may be frequent and require adapting oneself • activity changes pertain to the varying context of activities	Constant updating of current knowledge in the field of activities and general education, complementing it with current field of activity knowledge and practice	Obtaining new skills that are necessary to adapt to changed activity context	Adapting to the contents of tasks and frequent change of context
Level 5			
Criteria of activities	**Cognitive competences**	**Functional competences**	**General competences**
Complexity of activities: • activities are characterised by complex coordination of activity tasks across different fields of activities • activities comprise the assessment of lower qualification employee competences and their training	Coordination of knowledge of different fields of activities with general knowledge	Application of various work means, instruments, and methods	• solving different content problems in varying contexts • training lower qualification persons
Autonomy of activities: • activities are performed autonomously; supervision is restricted to the	• application of extensive factual and theoretical knowledge in different fields of activities,	• autonomous planning of own and lower qualification employees‘ activities	Planning and organising own and lower qualification persons‘ activities,

evaluation of their outcomes • activity tasks are set by a higher qualification person, often granting the possibility for the person performing the activity to choose methods and means to solve the tasks • activities are characterised by leadership over activities of other persons	consulting with colleagues and higher qualification specialists • autonomous use of various information sources	• autonomous selection of methods and means to solve tasks assigned by higher qualification persons	supervising the performance of activities, being able to inspect the quality of activity performance
Variability of activities: • technological and organisational requirements of the activities as well as their environment are constantly changing; the changes are often unforeseeable and may be related to new areas of activity	Systematic updating of current knowledge through the acquisition of new knowledge, required for the adaptation to constant and often unforeseeable changes in several different fields of activities	Mastering new methods, means, and instruments of solving problems in different fields of activities, required to adapt to constant and often unforeseeable changes	• adopting group-level decisions under circumstances of unforeseeable environment changes • initiating and organising own and lower qualification persons' continuous learning process • self-motivation and motivation of others for the improvement in a chosen field of activities

Level 6

Criteria of activities	Cognitive competences	Functional competences	General competences
Complexity of activities: • activities are complicated, characterised by the variety of tasks and their contents • performance of activities involves the use of various means and methods • activity tasks may comprise various fields of professional activity	Integration of extensive theoretical knowledge based on fundamental and applied research findings or required for the introduction of innovation along with practical knowledge, by solving tasks in various fields of activities	Systematic application and management of complex methods, means, and information, required for the performance of activities	Maintaining communication with specialists in the respective professional field, critical valuation of activities performed and their outcomes presented
Autonomy of activities: • activities are performed autonomously by choosing task performance methods • activities require the ability to organise the work of respective people for the performance of the tasks set	Autonomous analysis, comparison, and accumulation of fundamental and applied research findings essential for the chosen field of professional activity as well as the data on innovations that emerge in the field of activities	• planning complex activities with regard to goals set • analysis of activity outcomes, referring to them when adjusting activities and taking responsibility for the quality of activity outcomes • implementing various project activities	Passing on information, ideas, and solutions to specialists and non-specialists
Variability of activities • activities are constantly changing due to the advance of knowledge and technology in the specific professional field	• Systematic enhancement and extension of the professional field knowledge	Application of new instruments and means in the performance, management and adjustment of activities, taking into account changes taking place in respective	Consistent and systematic learning with regard to activity outcomes and evaluation of the requirements raised by continuous activity changes

• major part of activity changes is unforeseeable		activities	
Level 7			
Criteria of activities	**Cognitive competences**	**Functional competences**	**General competences**
Complexity of activities: • activities are complex, comprising various interconnected tasks • activity tasks may comprise several related fields of professional activity	Expert evaluation and application of the latest theoretical knowledge in professional activity and field of study based on fundamental research findings	• coordination and implementation of various applied research and innovation introduction, employee qualification improvement projects • setting activity performance quality standards	• adopting complex and systematic activity improvement solutions based on expert know-how and experience in various fields of activity • cooperation with specialists in the respective professional and other fields, critical valuation of activities performed and their outcomes presented
Autonomy of activities: • activities are performed by autonomously setting tasks of a respect field of activity • activities include taking leadership over other employees‘ work • activities pertain to the adoption of decisions, aimed at activity enhancement and improvement	Discovering new facts through the performance of applied professional activities and/or field of study research	• autonomous performance of applied research • providing consultations in the field of activities	• creative leadership over the activities of people with various qualification and occupational backgrounds by sharing own experience and expert knowledge • planning the improvement of own qualification
Variability of activities: • activities and their environment are subject to intensive changes, conditioned by the knowledge and technology progress in various fields of professional activity. • activities comprise constantly changing combinations of task. • possible unforeseeable changes in activity environment.	Creative enhancement and extension of the professional field knowledge through independent learning and applied research	Improvement and adaptation of various means and instruments, required for the performance of applied research, studies, cultural and art activities or the introduction of innovations	Adoption of innovative solutions based on research results as well as the evaluation of alternative solutions and possible social and ethical consequences of activities performed

Level 8			
Criteria of activities	**Cognitive competences**	**Functional competences**	**General competences**
Complexity of activities: • activities are complex, characterised by the creation of new knowledge and innovation • activities are characterised by a broad variety of tasks and the complexity of their contents • activities are characterised by strategic activity objectives	Application of the latest knowledge based on fundamental and applied research results for the creation of new knowledge, ideas, activity performance methods, methodology, processes, and technology	Creation, synthesising and evaluation of new complex ideas, methods, processes, and instruments in handling strategically important science, art, and social evolution and development, professional activity or cultural and art creation tasks	• maintaining communication with colleagues, scientific community and wider society by passing on the prospects of the innovations and further development in the personal field of expertise. • adoption of public-importance strategic decisions
Autonomy of activities: • activities are performed through strategic planning, often taking responsibility for the results and quality of work performed by other employees • activities pertaining to the adoption of strategically important decisions • activities comprise training and consulting specialists in the respective professional field	Discovering new knowledge in various fields of activities based on fundamental and theoretical results of applied scientific research performed	• autonomous planning, implementation, and coordination of fundamental and applied scientific research or cultural and art creation projects. • passing on the latest knowledge to specialists and experts of various fields.	Designing and developing long-term prospects of own and expert team's professional advancement
Variability of activities: • activities are subject to constant and intensive changes • activity environment is unforeseeable (hardly predictable)	Constantly taking interest in the latest fundamental and applied research as well as the knowledge created by these	Initiation and design of original scientific research, study, and cultural and art creation, innovation creation means, instruments, and processes	• openness to innovation, developing positive attitude towards the development of the organisation and the society • assuming responsibility for moral, social, economic, environmental, etc. consequences of the activities performed by oneself and the team

Source: Lithuanian qualifications and VET development centre, 2012.

A2.1.16. Luxembourg

NQF level descriptor elements in Luxembourg

Level descriptor elements		
Knowledge (*connaissances*)	**Aptitudes**	**Attitudes**
The term *connaissances* should be understood as the outcome of assimilation of knowledge. It refers to a group of facts, principles, theories and practices connected with a particular area of study or work.	Aptitudes should be understood as referring to the ability to apply knowledge to the completion of tasks and the resolution of problems.	Attitudes should be understood as referring to personal and social dispositions in work or study situations and for professional or personal development.

Descriptors for levels 1 to 8

	Knowledge (*connaissances*)	Aptitudes	Attitudes
Level 1	• acquisition of basic knowledge, and the knowledge necessary for working life and the exercise of a citizen's rights and duties in a democratic society	• ability to carry out simple tasks, under supervision, in a structured context	• carry out defined tasks under direct guidance and demonstrate personal commitment in structured contexts • learn under direct guidance
Level 2	• acquisition of specific elementary knowledge in a field of work or study	• ability to carry out simple tasks, under supervision, in a simple, stable context, keeping to simple rules and routines and using some vocational skills	• take limited responsibility for improving performance of work in simple, stable contexts and within a team or peer group • learn under guidance, demonstrating some autonomy
Level 3	• acquisition of usual knowledge in a given field of work or study	• ability to accomplish specific tasks autonomously in a given field, keeping to rules and routines and using certain vocational skills	• take responsibility for accomplishing tasks and demonstrate some independence in own work in contexts that are generally stable, although certain factors may change • learn with some autonomy
Level 4	• application of general usual knowledge and thorough specialist knowledge within a given field of work or study	• ability to carry out complex tasks likely to arise in a given field of work or study, using vocational skills and identifying appropriate strategic approaches	• take responsibility for completion of structured activity in a work or study context that is generally predictable, but with many factors of change, some of which are interrelated • propose ways of improving the results of this activity • supervise the routine work of others • learn new notions and participate in evaluation and improvement of work or study

	Knowledge (*connaissances*)	Aptitudes	Attitudes
			activities
Level 5	• acquisition of diverse procedural and declarative knowledge, often specific to a given field of work or study • analysis, interpretation and evaluation of information, concepts and ideas • understanding of different perspectives and approaches, and the underlying reasoning	• mastery of skills allowing the transfer of procedural and declarative knowledge to resolve new problems • ability to develop appropriate creative technical responses in seeking solutions to well-defined concrete and abstract problems	• take responsibility for management of work or study projects requiring problem solving involving many factors, some of which interact and generate unpredictable changes. • develop projects by proposing appropriate solutions • exercise autonomy of judgment within broad parameters • evaluate and develop own competences through work- or study-related learning • manage and train subordinates. Ensure performance development for subordinates and team
Level 6	• acquisition of advanced procedural, declarative and methodological knowledge, either within a given field of work, or within one or more fields of study • critical analysis, interpretation and evaluation of this knowledge and understanding of the context of the field of study or work	• mastery of advanced skills, demonstrating a sense of innovation in resolving complex unpredictable problems in a specialised field of work or study • ability to manage complex study or work projects • ability to communicate information, ideas, problems and solutions within the field of work or study to both specialist and non-specialist audiences	• gather and interpret relevant data to inform judgments that include reflection on relevant social, scientific or ethical issues • develop learning strategies with a view to continuing to undertake further study and acquiring competences for mastering complex processes and situations • take responsibility for developing performance of subordinates and team • exercise autonomy and general judgments
Level 7	• acquisition and mastery of the systematics of specialised, up-to-date procedural, declarative and methodological knowledge in a field of work or study • critical analysis, interpretation and evaluation of information, concepts and theories with a view to their application and modification	• mastery of specialised skills for developing new ideas and procedures, taking possible alternatives into account • ability to manage complex, unpredictable situations calling for new solutions, and ability both to communicate the results clearly, to both non-specialist and specialist audiences, and discuss them with the latter	• form judgments, integrate knowledge, handle complexity, and express opinions on the basis of limited information, including consideration of social, scientific and ethical issues • ability to think autonomously in relation to strategies with a view to professional or scientific development • initiate and lead professional or scientific collaboration autonomously, involving responsibility for the work and roles of other people • exercise broad-ranging judgment and autonomy within a significant field of work or study

	Knowledge (*connaissances*)	Aptitudes	Attitudes
Level 8	• acquisition of specialised, up-to-date knowledge at the most advanced frontier of one or more scientific fields, or strategic, innovative knowledge within a vocational field • critical analysis, interpretation and assessment of this knowledge to develop new knowledge or extend the boundaries of a given field of knowledge or work	• mastery of a wide range of skills so as to be able to identify and resolve problems involving multiple complex interacting factors in the field of research, development or innovation in a professional or scientific field • ability to manage situations arising in new contexts resulting in significant organisation and professional change • ability to assess new ideas and new processes	• form judgments, devise, create and evaluate innovative processes that extend the frontier of the field of knowledge or work, taking social, scientific and ethical issues into consideration • initiate research or development projects autonomously, thereby producing new knowledge, aptitudes and attitudes • initiate specific discussion autonomously in order to develop the knowledge, aptitudes and attitudes of others in the scientific or professional field • exercise broad-ranging autonomy and judgment as a practitioner responsible for developing knowledge or the field of work or for substantial organisation and professional changes

Source: Luxembourg Ministry of National Education, Children and Youth and Ministry of Higher Education and Research, 2012.

A2.1.17. Hungary

Main NQF level descriptor elements in Hungary

Level descriptor elements			
Knowledge	Skills	Attitudes	Autonomy and responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Attitudes	Autonomy and responsibility
Level 1	• knows the most important concepts and basic facts of a particular topic • has a basic knowledge of the mother tongue, logical thinking and literacy • knows the distinctive materials and tools necessary for practical activities • understands and complies with rules and procedures of task execution	• has acquired a basic level of the key competences (especially: communication in the mother tongue, mathematical-logical thinking) • able to apply the knowledge necessary to solve a certain task/problem, provided that this requires the application of undemanding routines and algorithms	• willing to understand tasks, motivated to implement them successfully • demonstrates inquisitiveness and interest in learning and basic work situations • ready to work in a team, to share his/her knowledge with others	• capable of autonomous task execution in simple, routine job situations • needs guidance and continuous supervision in the case of novel or complex tasks • able to evaluate his/her own work with external guidance
Level 2	• knows the basic facts, concepts, simple correlations of a given topic (area of learning, speciality) • has a general command of the mother tongue/language, mathematical-logical and science/literacy • has the basic-intermediate level theoretical and practical knowledge necessary for the exercise of particular tasks connected to occupational profiles	• able to identify uncomplicated correlations of cause and effect • able to carry out identification, distinction and comparison in relation to different topics, upon predetermined specific criteria able to carry out multicomponent tasks/or series of tasks, occasionally able to use basic materials and tools with guidance • able to compose a written and verbal statement in a given field, react to a statement, use basic terminology • possesses basic competences necessary for cooperation	• in learning situations and tasks, is open to activities developing his/her knowledge • is aware of fundamental moral and collective values, basic civil rights and responsibilities	• in simple task situations works independently and with responsibility • in case of complex tasks instructions are sufficient, close supervision is not necessary • a sense of responsibility is developing, and self-control emerges in the evaluation of the work undertaken

	Knowledge	Skills	Attitudes	Autonomy and responsibility
Level 3	• knows basic facts, concepts and processes related to a given field of work or study, recognises and understands multi-factor correlations • in addition to being acquainted with tools, methods and procedures for carrying out tasks, applies basic methods of autonomous knowledge acquisition • possesses a broader inventory of knowledge elements/units in the field of study/work of his/her interest • knows and applies rules, processes of task execution	• able to establish linkage between knowledge and knowledge schemata, and develop a new schema in a well-known context • in addition to the routine performance of simple tasks, is also able to solve new problems with unusual elements creatively • able to select and apply the appropriate tools, materials • able to perceive correlations and think in a systemic context	• able to judge and apply in a critical manner information from diverse sources • open to making joint efforts, working in a group, and accepts interdependence • complies with the widely accepted social norms both in professional and private communication • committed to his profession/field of interest	• self-control and systematic self-reflection concerning individual learning and work activities becomes common
Level 4	• knows basic facts and concepts related to a given field of work or study, understands key processes and correlations • knows the language and terminology of a given field, preferably in a foreign language as well • knows and understands the conceptual correlations and structure of his field of interest • understands the correlations of complicated, multi-factor phenomena • is familiar with the methods for employing the facts, concepts, correlations and procedures of a given field	• able to apply knowledge related to a field of work or study in an unusual context • able to think systematically, and use certain forms of abstraction • able to gather new information, and process it independently • able to plan and implement his/her learning and problem solving strategy on his/her own and make the necessary corrections • able to identify problem situations in his/her field of work or study and articulate adequate proposals for solving them	• open to undertaking new tasks • able to assess possibilities; consider risks, alternatives and consequences; is capable of making compromises • follows ethical and legal norms in decision-making situations, understands the correlations between values, behaviour and lifestyle • committed to the profession and to quality work • keen on continuous self-education and applies its proceedings	• autonomy and self-control are characteristic in the performance of work, study and problem solving • takes responsibility for his/her own actions or for the work of a small group or community he/she is in charge of

	Knowledge	Skills	Attitudes	Autonomy and responsibility
Level 5	• has a fundamental general and specialised, theoretical and practical knowledge, related to a particular field of study/work. Theoretical and practical knowledge is systematic • his/her sound knowledge regarding the application of methods and tools ensures lasting exercise of the given profession at a high level • knows the specific terminology of the given field (in the mother tongue and in at least one foreign language)	• able to solve the tasks related to a given profession: to design and carry them out, to choose the appropriate methods and tools, to apply them in an individual and complex manner • his/her skills to communicate in the mother tongue and in a foreign language enable him/her to carry out professional cooperation with speakers of other languages • able to improve his/her knowledge, and apply different methods of knowledge acquisition, self-improvement and current information and communication technologies for that purpose • able to make responsible decisions related to employment and entrepreneurship	• open to new achievements and innovations in his/her field of work/study. Endeavours to be acquainted with, to understand and to use them • aims for continuous self-education • committed to high-quality professional work • self-critical concerning his/her own work • accepts and genuinely stands for the social role and the values of his/her profession	• works autonomously under continuous self-monitoring • takes responsibility for his or her own work as well as for the work, achievements or failures of the team under his/her supervision • in decision-making, takes into consideration the ethical and legal rules of his/her field of work
Level 6	knows the fundamental comprehensive facts, tendencies and limits of his/her field of work or study • knows the key correlations, theories and terminology of a given field of study or work • knows fundamental methods for knowledge acquisition and problem solving of his/her speciality	• capable of carrying out an elementary analysis of the concepts which constitute the foundations of the knowledge of a given field of work or study, to outline correlations, and to make proper evaluations • has the necessary skills for studying autonomously. • able to identify frequently occurring problems in his/her field, explore the theoretical and practical background needed for their solution and able to address them through the application of standard procedures • able to use and understand the literature of his/her profession, its	• knows, accepts and genuinely communicates his/her job's social function and its relationship to the world • willingness to disseminate the general way of thinking and basic features of the practical operation of his/her profession • strives for continuous self-education	• capable of thinking over independently the comprehensive, fundamental questions of his/her profession and of elaborating them by using given sources • responsibly communicates the fundamental principles of the profession • cooperative and shows responsible behaviour with the professionals of his/her field • consciously accepts the ethical standards of the profession.

	Knowledge	Skills	Attitudes	Autonomy and responsibility
		library and IT sources • able to cooperate with others. • capable of managing different resources • able to use his/her professional knowledge in accordance with the diverse expectations of a given workplace		
Level 7	• knows the general and specific features, main tendencies and exact limits of the general domains of a given field of work or study, as well as its links to related fields • has in-depth knowledge of the correlations, theories and the related terminology of a given field of work or study • knows the particular research methods (especially those related to knowledge acquisition and problem solving) used in his field, abstraction techniques and the methods to cope with practical aspects of theoretical questions	• capable of performing exhaustive analysis of diverse conceptual domains which constitute the body of knowledge of a given field of work or study, to devise general and specific correlations and to carry out related evaluation activities • able to identify profession- specific issues, explore and outline the theoretical and practical background needed for their solution able to approach profession-specific problems in an interdisciplinary, comprehensive manner • able to join in research and development projects • able to make advanced use of info-communication techniques of his/her field as well as use and process information from Hungarian and foreign language publications • able to apply a wide range of methods and techniques in various contexts of different degree of complexity and predictability • able to produce, in a scientific format, analysis and summaries of	• knows and identifies with the specific and general relations and professional identity that constitute the characteristics of his/her profession and its individual and social functions. This is the basis for his/her unfolding vocational commitment • able to understand and genuinely communicate the particulars and the synthesis of his/her profession's topics • his/her professional interest gets deeper, and is consolidated	• possesses considerable autonomy in elaborating general and specific professional issues, in representing and justifying professional views • assumes responsibility in taking initiative for cooperation • partner on equal footing in cases of professional cooperation • thinks over and stands for the ethical positions of his/her field

	Knowledge	Skills	Attitudes	Autonomy and responsibility
		a subfield of his/her area of study • able to apply professional skills in accordance with the various requirements of a given workplace		
Level 8	• has an in-depth knowledge, enabling him/her to undertake research, of the general and specific features, main tendencies and exact limits, consensual and contentious correlations of his/her field • has a creative understanding of the theoretical elements, correlations, conceptual systems and terminology of a given field • has the methodological and research skills necessary to perform research autonomously in a given field	• capable of analysing a given field in a creative manner, able to draft specific and general correlations through the application of new approaches, and make appropriate evaluations • able to use and further develop the special knowledge acquisition and problem-solving methods of his/her field • able to develop innovative, previously unknown practical aspects of a theoretical issue • able to plan and carry out new projects, conduct research in a given field of science, and develop new techniques and approaches • able to identify unanticipated professional problems, and explore the theoretical and practical background needed for solving them in detail • able to establish and disseminate new correlations vital for his/her profession as well as comprehensive links having significance for individual and community existence	• in his/her field of interest, represents and further develops the relationships contributing to the process of human self-creation as a result of the speciality of the given field of work • has an interest and learning skills which permit him/her to identify and solve research problems in the field, which are covert or unpredictable at the moment • has a solid sense of vocation, stable commitment to looking for new approaches, accepts the necessity to work persistently	• develops and initiates new knowledge areas and new practical solutions creatively and independently • able to participate as a leader and is giving evidence of high skills for cooperation in the process of defining theoretical and practical issues • able to take part on an equal footing in a professional discussion of a given field • undertakes to raise and answer new ethical issues in connection with the theoretical and practical issues of his/her profession, with responsibility

Source: Government of Hungary, 2012; Hungarian Educational Authority, 2015.

A2.1.18. Malta

Main NQF level descriptor elements in Malta

Level descriptor elements			
Knowledge	**Skills**	**Competences**	**Learning outcomes**
Knowledge refers to the understanding of basic, factual and theoretical information	Skills refer to the application of the acquired knowledge and understanding in different contexts	Competences refer to a person's capability, such as whether one is competent to exercise skills with or without supervision, with or without autonomy and with or without responsibility	Learning outcomes are used to express the requirements or standards set by qualifications. They are defined in terms of: • knowledge and understanding • applying knowledge and understanding • communication skills • judgemental skills • learning skills • autonomy and responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence	Learning outcomes
Level 1 ([40])	• acquires basic general knowledge related to the immediate environment and expressed through a variety of simple tools and contexts as an entry point to lifelong learning • knows and understands the steps needed to complete simple tasks and activities in familiar environments • is aware and understands basic tasks and instructions	• has the ability to apply basic knowledge and carry out a limited range of simple tasks • has basic repetitive communication skills to complete well-defined routine tasks and identifies whether actions have been accomplished • follows instructions and is aware of consequences of basic actions for self and others	• applies basic knowledge and skills to do simple repetitive and familiar tasks • participates in and takes basic responsibility for the action of simple tasks. • carries out activities under guidance and within simple defined timeframes • acquires and applies basic key competences at this level	• **Knowledge and understanding:** has basic knowledge and understanding of textbooks and simple tasks while relating to the immediate environment • **Applying knowledge and understanding:** follows instructions and completes repetitive simple tasks in familiar contexts and under a quality controlled system • **Communication skills:** communicates basic information in familiar repetitive contexts • **Judgmental skills:** assesses and ensures that assigned tasks have been completed effectively • **Learning skills:**

([40]) There are introductory levels (A and B) below Level 1 in the Maltese NQF, but the level descriptors of these A and B levels are not yet included in the framework.

	Knowledge	Skills	Competence	Learning outcomes
	• understands basic textbooks			acquires and applies key competences to defined actions • **Autonomy and responsibility:** takes some responsibility for completing simple tasks and exercises limited autonomy
Level 2	• possesses good knowledge of a field of work or study • is aware of and interprets types of information and ideas • understands facts and procedures in the application of basic tasks and instructions • selects and uses relevant knowledge to accomplish specific actions for self and others	• has the ability to demonstrate a range of skills by carrying out a range of complex tasks within a specified field of work or study • communicates basic information • ensures tasks are carried out effectively	• applies factual knowledge and practical skills to do some structured tasks • ensures one acts proactively • carries out activities under limited supervision and with limited responsibility in a quality-controlled context • acquires and applies basic key competences at this level	**Knowledge and understanding:** understands and uses good knowledge for tasks, procedures or a field of work or study • **Applying knowledge and understanding:** follows instructions and completes a range of well-defined tasks • **Communication skills:** communicates basic information in unfamiliar contexts • **Judgment skills:** selects and uses information for specified tasks and is proactive • **Learning skills:** acquires and applies key competences to a range of actions • **Autonomy and responsibility:** takes responsibility and exercises autonomy in well-defined tasks under a quality-controlled system
Level 3	• understands the relevance of theoretical knowledge and information related to one field of work or study • assesses, evaluates and interprets facts establishing basic principles and concepts in a particular field of work or study • understands facts and procedures in the application of more complex tasks and instructions • selects and uses	• demonstrates a range of developed skills to carry out more than one complex task effectively and in unfamiliar and unpredictable contexts • communicates more complex information • solves basic problems by applying basic methods, tools, materials and information given in a restricted learning environment	• applies knowledge and skills to do some tasks systematically • adapts own behaviour to circumstances in solving problems by participating proactively in structured learning environments • uses own initiative with established responsibility and autonomy, but supervised in quality-controlled learning environments normally in a trade environment • acquires key competences at this level	• **Knowledge and understanding:** understands theoretical knowledge and information related to complex procedures in a field of work or study • **Applying knowledge and understanding:** follows instructions and carries out complex tasks systematically and in unfamiliar and unpredictable contexts • **Communication skills:** communicates complex information in unfamiliar and unpredictable contexts • **Judgment skills:** assesses, evaluates and interprets facts related to a field of work or study and applies basic problem-solving techniques • **Learning skills:** acquires and applies key competences as a basis

	Knowledge	Skills	Competence	Learning outcomes
	relevant knowledge acquired on one's own initiative to accomplish specific actions for self and others		as a basis for lifelong learning	for lifelong learning • **Autonomy and responsibility:** takes agreed responsibility for completing complex tasks, and interacts with the immediate environment and in defined actions at one's own initiative
Level 4	• understands broad theoretical knowledge and analyses of information related to a field of work or study • understands facts and establishes basic principles in broad contexts within a field of work or study • applies facts and procedures in broad contexts within a defined field of work or study • selects and analyses theoretical knowledge in broad contexts within a specific field of work or study	• demonstrates acquired knowledge and the ability to apply a range of technical or academic skills to carry out multiple complex tasks • communicates theoretical and technical information in a work or learning environment • generates solutions to specific problems within a field of work or study	• applies knowledge and skills to perform qualitative and quantitative tasks that require technical capacity normally associated with a technician's competence • supervises the quality and quantity of work of self and others under quality-assured structures, with responsibility and autonomy • demonstrates an advanced level of key competences at this level as a basis for higher education	• **Knowledge and understanding:** understands and analyses broad theoretical, practical and technical knowledge related to a field of work or study • **Applying knowledge and understanding:** follows instructions and carries out defined theoretical, complex and technical tasks • **Communication skills:** communicates theoretical and technical information in a work or learning context • **Judgmental skills:** interacts with and generates solutions to problems within the immediate environment of a given field of work or study • **Learning skills:** applies key competences to defined actions and to a technical or academic field of work or learning context • **Autonomy and responsibility:** exercises autonomy and takes responsibility for defined qualitative and quantitative tasks of self and others by completing complex tasks in a broad context under quality assured mechanisms
Level 5	• understands knowledge in a field of study that builds on general further education and is typically at a level supported by high-level textbooks leading to continued studies to complete the first cycle • develops strategic and creative responses in researching solutions to well-defined concrete	• demonstrates transfer of theoretical and practical knowledge, in creating solutions to problems • conveys ideas in a well-structured and coherent way to peers, supervisors and clients using qualitative and quantitative information • has the ability to identify and use data to formulate responses to well-defined concrete and abstract	• manages projects independently that require problem-solving techniques where there are many factors, some of which interact and lead to unpredictable outcomes • shows creativity in managing projects, manages people and reviews performance of self and others; trains others and develops team	• **Knowledge and understanding:** understands advanced textbooks which may lead to further academic or vocational learning and researches solutions to abstract problems • **Applying knowledge and understanding:** demonstrates operational capacity and management skills using creativity • **Communication skills:** interacts with others to convey abstract and concrete solutions to problems in a field of work or study • **Judgmental skills:** formulates practical and theoretical responses to abstract and concrete problems and makes

	Knowledge	Skills	Competence	Learning outcomes
	and abstract problems • makes judgments based on knowledge of relevant social and ethical issues	problems • evaluates own learning and identifies learning needs necessary to undertake further learning	performance • expresses a comprehensive internalised personal world view reflecting engagement and solidarity with others • has the learning skills to undertake further studies with a degree of autonomy	judgements on social and ethical issues • **Learning skills:** evaluates own learning and can improve key competences for further learning, and promotes team training • **Autonomy and responsibility:** is responsible for the effective and efficient management of projects and people within agreed timeframes
Level 6	• understands knowledge that builds on general further education and typically includes some aspects that will be informed by knowledge at the forefront of a field of study • uses detailed theoretical and practical knowledge which is at the forefront of a field of study and involves critical understanding of theories and principles • understands methods and tools in a complex and specialised field of work or study and innovation in terms of methods used • makes judgments based on relevant social and ethical issues that arise in a field of work or study	• applies knowledge and understanding in a manner that indicates a professional approach to work or study • communicates ideas, problems, and solutions to both specialist and non-specialist audiences using a range of techniques involving qualitative and quantitative information • has the ability to gather and interpret relevant data (usually within the field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues • devises and sustains arguments to solve problems • consistently evaluates own learning and identifies learning needs	• demonstrates administrative design, resource and team management and is responsible for work or study contexts that are unpredictable and require that complex problems are solved • shows creativity and initiative in developing projects in management processes, manages and trains people to develop team performance • has developed those learning skills necessary to continue to undertake further studies with a high degree of autonomy	• **Knowledge and understanding:** understands professional theoretical and practical knowledge in a specialised field of work or study • **Applying knowledge and understanding:** demonstrates innovative theoretical and practical responses to work or study contexts • **Communication skills:** communicates ideas, problems, and solutions to both specialist and non-specialist audiences using a range of techniques involving qualitative and quantitative information to sustain arguments • **Judgment skills:** makes professional judgments on social and ethical issues within the area of specialisation, masters problem-solving skills, and evaluates the management of projects and people • **Learning skills:** assesses own learning and can specialise in one or more key competences for further learning • **Autonomy and responsibility:** is responsible for the management of creative and innovative projects and the team's performance
Level 7	• has comprehensive knowledge and understanding that is founded on and extends and/or enhances that	• demonstrates specialised or multidisciplinary knowledge that includes reflecting on social and ethical responsibilities	• creates a research-based diagnosis of problems by integrating knowledge from new or interdisciplinary fields and	• **Knowledge and understanding:** has comprehensive specialised or multidisciplinary theoretical and practical knowledge which forms the basis of original research, which may contribute to social and ethical issues

	Knowledge	Skills	Competence	Learning outcomes
	knowledge typically associated with bachelor level • uses specialised or multidisciplinary theoretical and practical knowledge some of which is at the forefront of a field of study. This knowledge forms the basis of originality in developing and, or applying ideas	linked to the application of one's knowledge and judgements • can communicate to specialist and non-specialist audiences clearly and unambiguously work or study related conclusions and knowledge which may be the outcome of research, self-study or experience • performs critical evaluations and analysis with incomplete or limited information to solve problems in new or unfamiliar environments, and to produce original research • develops new skills in response to emerging knowledge and techniques and demonstrates leadership skills and innovation in complex and unpredictable work and study contexts	makes judgments with incomplete or limited information • manages people and projects and demonstrates the ability to respond to the fast changing business environment • demonstrates autonomy in the direction of learning and a high level of understanding of learning processes • has the learning skills to allow continuation to study in a manner that may be largely self-directed or autonomous	• **Applying knowledge and understanding:** demonstrates capability in using knowledge and skills, to adapt to the fast-changing business environment and to manage people and projects efficiently • **Communication skills:** communicates with specialist and non-specialist audiences, clearly and unambiguously, conclusions and knowledge which may be the outcome of original research, self-study or experience • **Judgment skills:** performs critical evaluations and analysis with incomplete or limited information to solve problems in new or unfamiliar contexts, and to produce original research • **Learning skills:** makes assessments of personal continuous professional development, takes initiative to undertake self-directed study and may proceed to further specialisation • **Autonomy and responsibility:** is accountable and responsible for the original research within a personal social responsibility and/or business context, for one's operations and for adapting the management of people and projects reflecting the dynamic nature of the environment in which one operates
Level 8	• has a systematic understanding of a highly specialised field of study which builds on a specialised or multidisciplinary knowledge and understanding • extends or redefines existing knowledge and, or professional practice	• demonstrates mastery in skills such as the selection and analysis of research, writing, design, development and sustainability of the argument manifested in innovative scholarly research • responds to technological, social and cultural issues and addresses the needs of a knowledge-based society • communicates expertise to	• demonstrates authority in a specialised field of work or study and makes judgments involving a multitude of interacting factors • promotes social, scientific and ethical advancement through actions. • has sustained commitment to the development of new ideas	• **Knowledge and understanding:** has theoretical and practical expertise in a specialised field of knowledge which may contribute to social and ethical issues in a national and international dimension • **Applying knowledge and understanding:** demonstrates leadership and innovation in mastering research in work and study contexts • **Communication skills:** communicates expertise to a wide audience including peers and the general public using different methods including national and international publications, and participates in specialist fora • **Judgment skills:**

	Knowledge	Skills	Competence	Learning outcomes
		a wide audience including peers and the general public using different methods including national and international publications, and participates in specialist fora • demonstrates expertise in critical evaluations and analysis with incomplete or limited information to solve problems in new or unfamiliar environments, and to produce original research		demonstrates expertise in critical evaluations and analysis with incomplete or limited information to solve problems in new or unfamiliar environments, and to produce original research • **Learning skills:** has a sustained commitment to generating new ideas and innovative projects related to technological, cultural and social development • **Autonomy and responsibility:** is responsible for the leadership of a number of specialised projects and an authority in a specialised field of work or study

Source: Maltese Ministry of Education and Employment and National Commission for Further and Higher Education Malta, 2016; Government of Malta, 2012.

A2.1.19. The Netherlands

Main NQF level descriptor elements for levels 1 to 8 (plus an entry level) in the Netherlands

Context	The descriptions of the contexts, together with the described knowledge, determine the level of difficulty of the skills
Knowledge	Knowledge is the totality of facts, principles, theories and ways of practice, related to an occupation or a knowledge domain
Skills	Cognitive capabilities (logic, intuitive and creative thinking) and practical capabilities (psychomotor skills in the use of methods, materials, aids and instruments) applied within a given context:
• applying knowledge	• reproduce, analyse, integrate, evaluate, combine and apply knowledge in an occupation or a knowledge domain
• problem-solving skills	• comprehend, recognise or identify and solve problems
• learning and development skills	• personal development, autonomously or under supervision
• information skills	• obtain, collect, process, combine, analyse and assess information
• communication skills	• communicate based on context-relevant conventions
Responsibility and independence	The proven capability to collaborate with others and being responsible for own work or study results or of others

Descriptors for levels 1 to 8, including entry level

Entry Level

Context		A well-known and stable daily living environment
Knowledge		• possess basic knowledge of simple facts and ideas related to the living environment
Skills	applying knowledge	• reproduce and apply the knowledge • carry out simple and familiar (professional) tasks automatically
	problem-solving skills	• recognise and solve simple problems in daily life
	learning and development skills	• work on personal development under supervision
	information skills	• obtain and process information on simple facts and ideas related to the living environment
	communication skills	• communicate with peers using conventions which are relevant to the context
Responsibility and independence		• work with peers • have, under supervision, limited responsibility for the results of simple routine tasks or study

Level 1

Context		A familiar daily living or working environment
Knowledge		• possess basic knowledge of simple facts and ideas related to an occupation or a knowledge domain
Skills	applying knowledge	• reproduce and apply this knowledge • carry out simple and familiar (professional) tasks automatically
	problem-solving skills	• recognise and solve simple problems in professional practice or in the knowledge domain
	learning and development skills	• work under supervision on personal development
	information skills	• obtain and process information, simple facts and ideas related to the occupation or knowledge domain
	communication skills	• communicate with peers, supervisors and clients, appropriately to the context, using conventions which are relevant to professional practice
Responsibility and independence		• work with peers, supervisors and clients • under supervision, take responsibility for the results of simple tasks or study

Level 2

Context		A familiar daily living or working environment
Knowledge		• possess basic knowledge of facts and ideas, processes, materials, means and concepts of, and related to, an occupation or a knowledge domain
Skills	applying knowledge	• reproduce and apply this knowledge • carry out simple (professional) tasks with the help of selected standard procedures
	problem-solving skills	• recognise and systematically solve simple problems in professional practice or in the knowledge domain
	learning and development skills	• ask support for personal development after reflecting on and evaluating personal (learning) results
	information skills	• obtain and process basic information, i.e. facts, ideas, processes, materials, means and concepts of, and related to, the occupation or knowledge domain
	communication skills	• communicate with peers, supervisors and clients, appropriately to the context, using conventions which are relevant to professional practice
Responsibility and independence		• work with peers, supervisors and clients • take responsibility for the results of simple tasks or study

Level 3

Context		A familiar but changeable living or working environment
Knowledge		• possess knowledge of materials, means, facts, core concepts, simple theories, ideas, methods and processes of and related to an occupation or a knowledge domain
Skills	applying knowledge	• reproduce and apply this knowledge • recognise the limitations of existing knowledge in professional practice or in the knowledge domain and take action to address this • carry out (professional) tasks requiring tactical and strategic insight by making own choices from, and in combination with, standard procedures and methods
	problem-solving skills	• identify and systematically solve complicated problems in professional practice or in the knowledge domain by selecting and using appropriate data
	learning and development skills	• ask support for further personal development after reflecting on and evaluating personal (learning) results
	information skills	• obtain, process and combine information on materials, means, facts, core concepts, simple theories, ideas, methods and processes of and related to the occupation or knowledge domain
	communication skills	• communicate with peers, supervisors and clients, appropriately to the context, using conventions which are relevant to professional practice
Responsibility and independence		• work with peers, supervisors and clients • take responsibility for the results of defined tasks or study • take shared responsibility for the results of the routine work of others

Level 4

Context		A familiar but changeable living or working environment, and in an international environment
Knowledge		• possess broad and specialised knowledge of materials, means, facts, abstract concepts, theories, ideas, methods and processes of and related to an occupation or a knowledge domain
Skills	applying knowledge	• reproduce, analyse and apply this knowledge • evaluate and integrate data and develop strategies to carry out various (professional) tasks. • recognise the limitations of existing knowledge in professional practice or in the knowledge domain and take action to address this • analyse and carry out relatively complex (professional) tasks
	problem-solving skills	• identify, analyse and systematically solve relatively complicated problems in professional practice or in the knowledge domain in a creative way by selecting and using appropriate data
	learning and development skills	• undertake personal development by reflecting on and evaluating personal (learning) results
	information skills	• obtain, process and combine broad and specialised information on materials, means, facts, abstract concepts, theories, ideas, methods and processes of and related to the occupation or knowledge domain
	communication skills	• communicate with peers, supervisors and clients, appropriately to the context, using conventions which are relevant to professional practice
Responsibility and independence		• work with peers, supervisors and clients • take responsibility for the results of own activities, work or study • share responsibility for the results of activities and work of others

Level 5

Context		An unknown but changeable living or working environment, and in an international environment
Knowledge		• possess broad, specialised and in-depth knowledge of an occupation or a knowledge domain • possess detailed knowledge of some professions or knowledge domains and an understanding of a selected range of basic theories, principles and concepts • possess limited knowledge and understanding of some important current topics/issues and specialties related to the occupation or knowledge domain
Skills	applying knowledge	• reproduce, analyse and apply the knowledge in a range of contexts to solve problems related to the occupation or knowledge domain • use procedures in a flexible and inventive way • recognise the limitations of existing knowledge in professional practice or the knowledge domain and take action to address this • analyse and carry out complex (professional) tasks
	problem-solving skills	• identify, analyse and solve complex problems in professional practice or in the knowledge domain in a creative way by selecting and using relevant data
	learning and development skills	• undertake personal development by reflecting on and evaluating personal (learning) results
	information skills	• obtain, process, combine and analyse broad, in-depth and detailed information on a limited range of basic theories, principles and concepts of, and related to, the occupation or knowledge domain, as well as limited information on some important current subjects and specialities related to the occupation or knowledge domain, and present this information
	communication skills	• communicate in a targeted way with peers, supervisors and clients, appropriately to the context, using conventions which are relevant to professional practice
Responsibility and independence		• work with peers, supervisors and clients • take responsibility for the results of own activities, work or study • take shared responsibility for the results of activities and work of others and the management of processes

Level 6

Context		An unknown and changeable living or working environment, and in an international environment
Knowledge		• possess an advanced, specialised knowledge of and critical insight into, theories and principles of an occupation, knowledge domain or broad field of science • possess broad, integrated knowledge and understanding of the scope and the most important fields and boundaries of the occupation, knowledge domain or broad field of science • possess knowledge and understanding of some important present-day issues, topics and specialties related to the occupation, knowledge domain or broad field of science
Skills	applying knowledge	• reproduce, analyse and apply the knowledge, in different contexts in a way that demonstrates a professional and scientific approach to the occupation or knowledge domain • apply complex specialised skills based on the results of research • complete applied or fundamental research, under supervision, based on methodological knowledge • develop and deepen arguments • critically evaluate and combine knowledge and insights of a specific domain • recognise the limitations of existing knowledge in professional practice or in the knowledge domain and take action to address this • analyse and carry out complex professional or scientific tasks
	problem-solving skills	• identify and analyse complex problems in professional practice or in the knowledge domain and solve these problems in a tactical, strategic and creative way by selecting and using relevant data
	learning and development skills	• undertake personal development by reflecting on and evaluating personal (learning) results
	information skills	• critically collect and analyse in a responsible way broad, in-depth and detailed professional or scientific information on a limited range of basic theories, principles and concepts of, and related to, the occupation or knowledge domain, as well as limited information on some important current issues, topics and specialties related to the occupation or knowledge domain and present this information
	communication skills	• communicate in a targeted way with peers, specialists and non-specialists, supervisors and clients, appropriately to the context, using conventions which are relevant to professional practice
Responsibility and independence		• work with peers, specialists and non-specialists, supervisors and clients • take responsibility for the results of own work or study and for the results of the work or study of others. • take shared responsibility for the management of processes and the professional development of people and groups • collect and interpret relevant data with the objective of forming an opinion based on considerations of relevant social, professional, scientific and ethical aspects

Level 7

Context		**An unknown but changeable living or working environment with a high degree of uncertainty, including an international environment**
Knowledge		• possess very specialised and advanced knowledge of an occupation, knowledge domain or field of science and at the interface between the different professions, knowledge domains and fields of sciences • possess a critical understanding of a range of theories, principles and concepts, including the most important relating to the occupation, knowledge domain or field of science • possess extensive, detailed knowledge and critical understanding of some important current issues, topics and specialties related to the occupation, knowledge domain or field of science
Skills	applying knowledge	• reproduce, analyse, integrate and apply the knowledge in a range of contexts; use it to handle complex matters • use this knowledge as the basis of original ideas and research • use acquired knowledge at a high level of abstraction • think conceptually; develop and deepen arguments • complete, independently, fundamental research based on methodological knowledge • provide an original contribution to the development and application of ideas, often in the area of research • recognise the limitations of existing knowledge in professional practice or in the knowledge domain and at the interface between the different professions or knowledge domains and take action to address this • analyse and carry out complex professional or scientific tasks
	problem-solving skills	• identify and analyse complex problems in professional practice or in the knowledge domain or field of science and solve the problems in a tactical, strategic and creative way • contribute to a (scientific) solution of complex problems in professional practice or in the knowledge domain or field of science by identifying and using data
	learning and development skills	• undertake personal development which is mostly autonomous
	information skills	• critically collect and analyse in a responsible way broad, in-depth and detailed scientific information on a range of theories, principles and concepts of, and related to, the occupation, knowledge domain, or field of science, as well as limited information on some important current subjects and specialties related to an occupation, knowledge domain, or field of science; present this information
	communication skills	• communicate in a targeted way with peers, specialists and non-specialists, supervisors and clients, appropriately to the context, using conventions which are relevant to the professional field
Responsibility and independence		• work with peers, specialists and non-specialists, supervisors and clients • take responsibility for the results of own work or study and for the results of the work or study of others. • take responsibility for the management of complex processes and the professional development of people and groups • formulate judgements based on incomplete and limited information, taking into account social, scientific and ethical responsibilities related to the application of own knowledge and judgements

Level 8

Context		An unknown but changeable living or working environment with a high degree of uncertainty, and in an international environment
Knowledge		• possess the most advanced knowledge of an occupation, knowledge domain or field of science and at the interface between the different occupations, knowledge domains or fields of science • possess knowledge acquired by personal research or work, leading to an important contribution to development in a vocational and scientific field • possess a critical insight into a vocational or scientific field, including a critical understanding of the most important and current theories, principles and concepts
Skills	applying knowledge	• reproduce, analyse, integrate and apply this knowledge in an authoritative way and use this knowledge to handle complex matters in a range of contexts • use this knowledge as the basis of original ideas and research • use acquired knowledge at a high level of abstraction • complete complex fundamental research based on methodological knowledge • contribute through original research to moving the boundaries of knowledge by an extensive amount of work, of which a part deserves national or international approved publication • think conceptually, develop and deepen arguments • recognise the limitations of existing knowledge in professional practice or in the knowledge domain or field of science at the interface between the different professions or knowledge domains and take action to address this • analyse and carry out complex professional or scientific tasks
	problem-solving skills	• identify and analyse complex problems in professional practice or in the knowledge domain or field of science and solve the problems in a tactical, strategic and creative way • contribute to a (scientific) solution of complex problems in professional practice or in the knowledge domain or the field of science by identifying and using data
	learning and development skills	• undertake personal development and engineering technological, social or cultural progression in society which is mostly autonomous
	information skills	• critically collect and analyse in a responsible and broad way in-depth and detailed scientific information about a range of theories, principles and concepts, of and related to, the occupation, knowledge domain, or field of science, as well as selected information on some important current subjects and specialties related to the occupation, knowledge domain, or field of science, and present this information
	communication skills	• communicate in a targeted way with peers, specialists and non-specialists, supervisors and clients, the wider scientific community and society as a whole, appropriately to the context, using conventions which are relevant to the professional field
Responsibility and independence		• work with peers, specialists and non-specialists, supervisors and clients, the wider scientific community and society as a whole • take responsibility for the results of own work or study and for the results of the work of others • take responsibility for the management of complex processes and the professional development of people and groups • draft, develop, carry out and apply with academic integrity a complex fundamental research process

Source: Dutch Ministry of Education, 2012.

A2.1.20. Austria

Main NQF level descriptor elements in Austria

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• factual • theoretical	• cognitive • practical	• autonomy • responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence
Level 1	• basic general knowledge	• basic skills required to carry out simple tasks	• work or study under direct supervision in a structured context
Level 2	• basic factual knowledge of a field of work or study	• basic cognitive and practical skills required to use relevant information to carry out tasks and to solve routine problems using simple rules and tools	• work or study under supervision with some autonomy
Level 3	• knowledge of facts, principles, processes and general concepts, in a field of work or study	• a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	• take responsibility for completion of tasks in work or study • adapt own behaviour to circumstances in solving problems
Level 4	• factual and theoretical knowledge in broad contexts within a field of work or study	• a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	• exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change • supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5 ([41])	• comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an	• a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	• exercise management and supervision in contexts of work or study activities where there is unpredictable change

([41]) The descriptor for the higher education short cycle (within or linked to the first cycle), developed by the *Joint quality* initiative as part of the Bologna process, corresponds to the learning outcomes for EQF level 5.

	Knowledge	Skills	Competence
	awareness of the boundaries of that knowledge		• review and develop performance of self and others
Level 6 ([42])	• advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	• advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	• manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts • take responsibility for managing professional development of individuals and groups
Level 7 ([43])	• highly specialised knowledge, some of which is at the forefront of knowledge, in a field of work or study, as the basis for original thinking and/or research • critical awareness of knowledge issues in a field and at the interface between different fields	• specialised problem-solving skills required in research and/or innovation to develop new knowledge and procedures and to integrate knowledge from different fields	• manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches • take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8 ([44])	• knowledge at the most advanced frontier of a field of work or study and at the interface between fields	• the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	• demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Source: EQF level descriptors are used, as per the Federal Act on the national qualifications framework (March 2016), Annex 1 (Austrian Parliament, 2016).

([42]) The descriptor for the first cycle in the framework for qualifications of the European higher education area, agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process, corresponds to the learning outcomes for EQF level 6.

([43]) The descriptor for the second cycle in the framework for qualifications of the European higher education area, agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process, corresponds to the learning outcomes for EQF level 7.

([44]) The descriptor for the third cycle in the framework for qualifications of the European higher education area, agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process, corresponds to the learning outcomes for EQF level 8.

A2.1.21. Poland

The Polish qualifications framework (PQF) introduces level descriptors at three levels of generality. At the most general level, universal descriptors – expressed in terms of knowledge, skills and social competence (presented below) – form the basis for the comprehensive PQF and act as a common reference point for development of more specific descriptors: for the different subsystems (general education, VET, higher education); and for subject areas or economic sectors.

Main NQF level descriptor elements in Poland

Level descriptor elements		
Knowledge	**Skills**	**Social competence**
Scope: • completeness of the cognitive perspective • dependencies **Depth of knowledge:** • completeness of the cognitive perspective • dependencies	**Problem solving and applying knowledge in practice:** • complexity of the problem • level of autonomy • innovation in the approach • conditions under which one acts **Learning:** • autonomy • methods **Communication:** • scope of expression • complexity of expression	**Identity:** • participation • sense of responsibility • conduct **Cooperation:** • team work • conditions under which one acts • leadership **Responsibility:** • consequences of one's own actions • consequences of the team's actions • evaluation

Descriptors for levels 1 to 8

	Knowledge The person knows and understands:	Skills The person is able to:	Social competence The person is ready to:
Level 1	• elementary facts and concepts as well as the dependencies between selected natural and social phenomena and the products of human thought	• carry out very simple tasks according to detailed instructions under typical conditions • solve very simple, routine problems under typical conditions • learn under direct guidance in a structured form • understand simple statements and formulate very simple statements	• respect the obligations arising from membership in various communities • act and cooperate with others under direct supervision in structured conditions • evaluate one's own actions and take responsibility for the direct results of those actions
Level 2	• a broadened set of basic facts, simple concepts as well as the dependencies between selected natural and social phenomena and the products of human thought	• complete simple tasks following general instructions most often under typical conditions • solve simple, routine problems most often under typical conditions • learn under guidance in a structured form • understand moderately complex statements, formulate simple statements • formulate and understand the simplest statements in a foreign language	• assume the obligations arising from membership in various communities • act and cooperate with others under direction in structured conditions • evaluate the actions in which one participates and take responsibility for the results of those actions
Level 3	• basic facts and concepts as well as the dependencies between selected natural and social phenomena and the products of human thought; furthermore, a broader scope of selected facts, concepts and dependencies in specific areas • the basic conditions of conducted activities	• complete moderately complex tasks following general instructions under partially variable conditions • solve simple, routine problems under partially variable conditions • learn partially autonomously under guidance in a structured form • understand moderately complex statements, formulate moderately complex statements. • understand and formulate very simple statements in a foreign language	• be a member of various types of communities, function in various social roles and assume the basic obligations ensuing from this • act and cooperate with others partially autonomously in structured conditions • evaluate one's own actions and those of the team; take responsibility for the results of those actions
Level 4	• a broadened set of basic facts, moderately complex concepts, theories, and the dependencies between selected natural and social phenomena and the products of human thought; furthermore, a broader scope of facts, moderately complex concepts and theories from specific fields and the dependencies between them • the basic conditions of conducted	• complete moderately complicated tasks, partially without instruction, often under variable conditions • solve moderately complex and somewhat non-routine problems often under variable conditions • learn autonomously in a structured form • understand complex statements, formulate moderately complex statements on a broad range of issues • understand and formulate simple statements in a foreign language	• assume responsibility for participating in various communities and functioning in various social roles • act and cooperate with others autonomously under structured conditions • evaluate one's own actions and those of persons one is directing; take responsibility for the results of one's own actions as well as those of the persons one directs

	Knowledge The person knows and understands:	Skills The person is able to:	Social competence The person is ready to:
	activities		
Level 5	• a broad scope of facts, theories, methods and the dependencies between them. • the diverse conditions of conducted activities	• complete tasks without instruction under variable, predictable conditions • solve moderately complex and non-routine problems under variable, predictable conditions • learn autonomously • understand moderately complex statements, formulate moderately complex statements using specialised terminology • understand and formulate very simple statements in a foreign language using specialised terminology	• assume basic professional and social responsibilities, evaluate and interpret them • independently act and cooperate with others under structured conditions, direct a small team under structured conditions • evaluate one's own actions and those of others and the teams one directs; assume responsibility for the results of those actions
Level 6	• an advanced level of facts, theories, methods and the complex dependencies between them • the diverse, complex conditions of conducted activities	• innovatively complete tasks and resolve complex and non-routine problems under variable and partially unpredictable conditions • autonomously plan one's lifelong learning • communicate with one's environment, substantiate one's position	• cultivate and disseminate models of good practice in the workplace and beyond • make decisions independently; critically evaluate one's own actions, those of the team one directs and the organisations in which one participates; assume responsibility for the results of those actions
Level 7	• an in-depth level of selected facts, theories, methods and complex dependencies between them, also in relationship to other fields • the diverse, complex conditions and axiological context of conducted activities	• complete tasks as well as formulate and solve problems with the use of new knowledge, also from other fields • independently plan one's own lifelong learning and direct others in this area • communicate with various target groups, appropriately substantiate one's position	• establish and develop models of good practice in the environments of work and life • initiate actions, critically assess oneself as well as the teams and organisations in which one participates • lead a group and take responsibility for it
Level 8	• the world's achievements in science and the arts and the resulting implications of this for practice	• analyse and creatively synthesise scientific and creative achievements to identify and solve research problems as well as those related to innovative and creative activities • contribute new elements to these achievements • independently plan one's own development as well as inspire the development of others • participate in the exchange of experiences and ideas, also in the international community	• conduct independent research which contributes to existing scientific and creative achievements • assume professional and public challenges: - taking into consideration their ethical dimension - taking responsibility for their results and developing models of good practice in such situations

Source: Polish Educational Research Institute, 2017.

A2.1.22. Portugal

Main NQF level descriptor elements in Portugal

Level descriptor elements		
Knowledge	**Skills**	**Attitudes**
• facts, principles, theories and practices	• cognitive skills (logical, intuitive and creative thinking) • practical skills (manual dexterity and the use of methods, materials, tools and instruments)	• autonomy • responsibility

Detailed description for the interpretation of level descriptor domains

Knowledge	Skills	Attitudes	Context (*)
Depth: Depth of knowledge is considered to increase progressively from the lowest to the highest level, as is the complexity and variety of knowledge **Understanding and critical thinking:** At the lower level, it is understood as interpretation of information and application in the context; At the highest, critical awareness of knowledge-related issues in the field and at the interface with other fields.	**Depth and breadth:** Progressive broadening and specialisation of the range of cognitive and practical skills, from a range of restricted breadth and basic depth at qualification level 1, to an advanced range of skills at the forefront of a field of work or study at the highest level of qualification. **Purpose:** At the lowest level, the individuals should be capable of performing tasks and solving simple problems by interpreting basic information (task of execution), and at higher level of qualification they are expected to be capable of research and innovation to solve critical problems and perform complex tasks or to redefine existing knowledge and professional practices (research and development tasks, innovation).	**Responsibility:** This subdomain includes responsibility for one's own work and responsibility for others. In terms of responsibility for one's own work, a gradation was adopted from work under instruction with shared responsibility (level 1) to work taking responsibility and with a sustained commitment to the development of new ideas and new processes at the forefront of a field of work or study (level 8). As for the level of responsibility for others, there is considered to be progression from no responsibility (level 1) to responsibility for others, demonstrating authority, innovation and scientific and professional integrity (level 8). **Autonomy:** This subdomain is structured from no autonomy/low level of autonomy (levels1/2) to maximum autonomy, understood as a sliding scale.	**Context of application:** Ranging from everyday activities at a lower level, to a specialised field of work or study and the interface between different areas at higher level. **Predictability and complexity:** Developing from a stable structure context at level 1, to an unpredictable and highly complex context at qualification level 8.

(*) Context is considered a transversal subdomain.

Source: Portuguese National Agency for Qualifications, 2011.

Descriptors for levels 1 to 8

	Knowledge	Skills	Attitudes
Level 1	• basic general knowledge	• basic skills required to carry out simple tasks	• work or study under direct supervision in a structured context.
Level 2	• basic factual knowledge of a field of work or study	• basic cognitive and practical skills required to use relevant information to carry out tasks and to solve routine problems using simple rules and tools	• work or study under supervision, with some autonomy.
Level 3	• knowledge of facts, principles, processes and general concepts in a field of work or study	• a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	• take responsibility for completion of tasks in work or study • adapt own behaviour to circumstances in solving problems
Level 4	• factual and theoretical knowledge in broad contexts within a field of work or study	• a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	• exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change • supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5	• comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	• a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	• exercise management and supervision in contexts of work or study activities where there is unpredictable change • review and develop performance of self and others
Level 6	• advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	• advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	• manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts • take responsibility for managing professional development of individuals and groups
Level 7	• highly specialised knowledge, some of Which is at the forefront of knowledge in a particular field of work or study, as the basis for original thinking and/or research • critical awareness of knowledge issues in a field and at the interface between different fields	• specialised problem-solving skills required in research and/or innovation to develop new knowledge and procedures and to integrate knowledge from different fields	• manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches • take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams

	Knowledge	Skills	Attitudes
Level 8	• knowledge at the most advanced frontier of a field of work or study and at the interface between fields	• the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	• demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Source: Portuguese National Agency for Qualifications, 2011.

A2.1.23. Romania

Main NQF level descriptor elements in Romania

Level descriptor elements		
Knowledge	**Skills**	Responsibility and autonomy
• factual • theoretical	• cognitive • practical	• autonomy • responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Responsibility and autonomy
Level 1	• basic general knowledge	• basic skills required to carry out simple tasks	• work or study under direct supervision in a structured context
Level 2	• basic factual knowledge of a field of work or study	• basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	• work or study under supervision with some autonomy
Level 3	• knowledge of facts, principles, processes and general concepts, in a field of work or study	• a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	• take responsibility for completion of tasks in work or study; adapt own behaviour to circumstances in solving problems
Level 4	• factual and theoretical knowledge in broad contexts within a field of work or study	• a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	• exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5	• comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	• a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	• exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others
Level 6	• advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	• advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	• manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups

	Knowledge	Skills	Responsibility and autonomy
Level 7	• highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as basis for original thinking and/or research; critical awareness of knowledge issues in a field and at the interface between different fields	• specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	• manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing that strategic performance of teams
Level 8	• knowledge at the most advanced frontier of a field of work or study and at the interface between fields	• the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	• demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Source: Government of Romania, 2018.

A2.1.24. Slovenia

Main NQF level descriptor elements in Slovenia

Level descriptor elements		
Knowledge	**Skills**	**Competences**
Knowledge is the result of learning and the assimilation of concepts, principles, theories and practices. Acquisition of knowledge takes place in various settings: in the educational process, at work and in the context of private and social life.	In the context of the Slovenian national qualifications framework, skills are described as cognitive (e.g. use of logical, intuitive and creative thinking) and/or practical (e.g. manual skills, creative skills, the use of materials, tools and instruments).	Competences relate to the ability to use and integrate knowledge and skills in educational, professional and personal situations. Competences are classified in terms of complexity, autonomy and responsibility. The Slovenian NQF distinguishes between generic and vocationally specific competences.

Descriptor for levels 1 to 10

	Knowledge	Skills	Competences
Level 1	• elementary general knowledge enabling further systematic learning	• basic literacy and the ability to learn information and concepts • practical skills required to carry out simple, repetitive tasks or a short sequence of simple tasks	• ability to operate in a specifically defined and highly structured setting
Level 2	• basic general and applied knowledge covering understanding of the main social and natural concepts, processes and laws • this serves as the basis for further learning and social participation	• basic literacy and practical skills including the use of basic tools, methods and materials • ability to carry out simple, repetitive tasks consisting of a small number of operations	• ability to operate with limited autonomy on the basis of verbal or written instructions and to acquire new knowledge and skills in a predictable and structured setting • taking a limited degree of responsibility
Level 3	• predominantly practical, life- and vocationally relevant knowledge with some theoretical basis, acquired primarily through the study of examples, imitation and practice in the context of a specific discipline	• basic literacy and practical skills on a limited scale including the use of appropriate tools, methods and materials • application of known solutions to resolve predictable problems on a limited scale • ability to carry out transparent and standardised tasks	• ability to acquire new knowledge and skills in a structured context with appropriate guidance • ability to operate with limited autonomy in a predictable and structured context on the basis of simple verbal or written instructions • taking a limited degree of responsibility

	Knowledge	Skills	Competences
Level 4	• predominantly vocational knowledge supplemented by knowledge of theoretical principles, particularly from the relevant discipline • the study of examples and the integration and application of knowledge take precedence over the principles of systematic scientific organisation	• application of knowledge to resolve various tasks and problems, including less typical situations • wide-ranging and specialised skills in relation to the area of operation, including the use of appropriate tools, methods, different technological procedures and materials • ability to carry out relatively transparent, less standardised tasks	• ability to operate in a familiar and less familiar setting with a greater degree of responsibility and autonomy • taking responsibility for characteristics and quality of products/services connected with work tasks or processes • taking responsibility for own learning • acquisition of new knowledge and skills in a supervised environment • this level is characterised by a certain entrepreneurial orientation and the ability to organise and work in teams
Level 5	• general and/or specialised knowledge acquired by getting to know different academic and/or professional fields and theoretical principles • this serves as the basis for further learning and slightly more advanced understanding of the discipline • learning takes place primarily through analytical thinking	• wide-ranging skills in relation to the area of operation, may also be specialised, including the use of appropriate tools, methods, different technological procedures, materials and theories • evaluation and use of information to formulate decisions and solutions to various problems or atypical situations • formulation of solutions in connection with well-defined abstract problems • ability to carry out various, frequently non-standardised, tasks	• ability to operate in diverse and specific settings • taking responsibility for the characteristics and quality of the work process and results, showing autonomy and a certain degree of initiative • taking responsibility and initiative for the acquisition of new knowledge and skills • this level is characterised by an entrepreneurial orientation and the ability to organise and work in complex and heterogeneous teams.
Level 6	• technical and theoretical knowledge in a specific field as well as practical knowledge for resolving concrete tasks • knowledge enables the resolution of more complex tasks in specific fields of the discipline	• ability to carry out more complex operational/technical tasks linked to the preparation of work and control and management of work processes • ability to carry out complex and usually specialised tasks in relation to the area of operation, including abstract thought and the use of appropriate tools, methods, different technological procedures, materials and theories	• ability to operate in different and specific settings with elements of creativity • autonomous activity characterised by taking responsibility for the work of individuals and groups, material sources and information • ability to make basic connections and place issues in a general social context is also important • identification of own learning needs and attention to knowledge transfer in a work setting

	Knowledge	Skills	Competences
Level 7	• advanced technical/theoretical and practical knowledge in a given field, supported by a broad theoretical and methodological basis	• ability to carry out complex operational/technical tasks, including the use of methodological tools • mastery of demanding and complex work processes through autonomous application of knowledge in new work situations • ability to diagnose and resolve problems in various specific work settings linked to the education and training domain • a basis for original thinking/work and critical reflection	• ability to operate in different settings and functions and articulate new knowledge • taking responsibility for defining and achieving own work results and/or work results of a heterogeneous group in defined fields of work • ability to devise and sustain arguments within specific work settings related to the field of education and training • identification of own learning needs, ability to take the initiative for own learning, ability to transfer knowledge within a group
Level 8	• advanced theoretical, methodological and analytical knowledge with elements of research serving as a basis for highly complex professional work	• mastery of highly demanding and complex work processes and methodological tools in specialised fields • planning and managing the work process on the basis of creative resolution of problems related to the field of education and training • capacity for original thinking/work and critical reflection	• ability to carry out tasks independently and autonomously in mainly atypical settings in broader or multidisciplinary contexts • ability to take responsibility for own professional development and instruct others • taking responsibility for decisions relating to activities, processes and management of complex and heterogeneous groups
Level 9	• advanced theoretical, methodological and analytical knowledge serving as the basis for original research/artistic work leading to the creation of new knowledge/works	• planning, managing and carrying out works of the highest complexity, including participation in research projects/artistic projects of the highest standard and resolving theoretical and practical problems in special work situations • capacity for complex original thinking/work and critical reflection	• ability to carry out tasks autonomously in atypical settings and broader or multidisciplinary contexts in connection with basic and/or applied research/artistic work • ability to take responsibility for own professional development and the development of the discipline • ability, independently, professionally and ethically, to orient own learning and learning of others in different contexts
Level 10	• advanced knowledge serving as the basis for autonomous, original research/artistic work or the development of the discipline at the highest level, which is connected with scholarly, professional or artistic recognition both nationally and internationally	• planning, managing and carrying out work of the highest complexity, including participation in research projects/artistic projects, and resolution of the most complex theoretical and practical problems • capacity for critical reflection, advanced abstract thinking and synthesising new and complex ideas	• capacity for highly autonomous work/creative work of the highest standard, interpretation and the ability to find answers to abstract questions and questions of the greatest complexity in a professional, academic or artistic field • ability to transfer knowledge via critical dialogue between a professional discipline and an academic discipline, and a capacity for responsible evaluation of the consequences of the application of new knowledge in different contexts

Source: Slovenian Parliament, 2015; Institute of the Republic of Slovenia for VET, 2014.

A2.1.25. Slovakia

Main NQF level descriptor elements in Slovakia

Level descriptor elements		
Knowledge	**Skills**	**Competences**
• general • vocational	• cognitive • practical	• responsibility and autonomy • social competences

Descriptors for levels 1 to 8

	Knowledge	Skills	Competences
	The individual has:	The individual can:	The individual is characterised by:
Level 1	• basic general working knowledge at the level of remembering	• reproduce basic knowledge • perform simple repetitive tasks	• performance of simple working activities under supervision in familiar and stable conditions
Level 2	• basic general knowledge at the level of understanding • basic professional knowledge at the level of remembering	• practically use information in specific situations • perform complex repetitive tasks • use simple methods, tools and materials in familiar conditions	• performance of simple working activities under supervision with some autonomy • perception of his/her share of responsibility
Level 3	• broader general knowledge • professional knowledge of concepts, methods, procedures and standards	• use common technical, non-technical and technological documentation and standards in a respective field • apply general and professional knowledge to solve simple problem tasks • use common procedures, methods, tools and materials when carrying out activities in the field	• independent and creative work in standard, rarely changing conditions • accountability for his/her performance • evaluation of his/her work
Level 4	• deepened general knowledge at the level of application • knowledge of regularities, principles, processes, standards and general concepts in a broader context	• use practical information of general nature • apply deepened general and professional knowledge • use technical documentation • apply complex procedures, methods, tools and materials when carrying out activities in the field	• independent solving of problem tasks in foreseeable changing conditions • responsibility for work in foreseeable changing conditions • responsibility for management of a smaller team • evaluation of the results of his/her work and the work of others
Level 5	• deepened general knowledge at the level of analysis • specialised professional knowledge in the field of work or education	• monitor, analyse, plan, organise and evaluate specific working procedures • implement specific working procedures • identify what constitutes a problem in the application of a chosen procedure • propose specific working procedures and solutions	• taking responsibility for the management, evaluation and development of activities in changing conditions • a high level of autonomy • creative work • the ability to transfer information and skills to others

Level 6	• general knowledge at the level of synthesis • practical and methodological knowledge of key areas in the field, which serve as the basis for practice, research or artistic creation	• propose solutions to methodical, professional, artistic or practical problems • modify general and professional knowledge to solve specific professional problems • implement solutions to methodical, professional, artistic or practical problems • use creative methods, tools, equipment and materials	• autonomy in solving specific problems in changing environments • planning his/her own education • autonomy and responsibility in decision-making • ability to present his/her opinions appropriately and professionally • creative and flexible thinking
Level 7	• general knowledge at the level of evaluation • professional and methodological knowledge in several areas of the field or practice, serving as a basis for innovation and originality in practice, research or arts	• propose and evaluate solutions for methodical, professional, artistic, practical or scientific problems in various areas of the field or practice • formulate recommendations for the development of scientific, working or artistic field • establish scientific or practical assumptions for problem solving • implement and evaluate solutions for methodical, professional, artistic, practical or scientific problems in various areas of the field or practice • create tutorials, projects of implementation and evaluation procedures for activities in the field	• a high level of autonomy and predictability in known and unknown environments • initiative and responsibility for managing work of a work team • innovative, creative thinking • professional presentation of the results of his/her own study or practice
Level 8	• general knowledge at the level of evaluation • knowledge of the priorities necessary for the development of the society • professional and methodological knowledge in several areas of the field or practice, serving as a basis for innovation and originality in practice, research or arts necessary for planning of research and development, or the development of an area of professional practice	• create and formulate new hypotheses, judgments and strategies for further development of science or field of work • evaluate theories, concepts and innovations • apply his/her own findings based on theoretical analysis and scientific research of comprehensive and/or interdisciplinary nature • design, validate and implement new research and working procedures	• critical, autonomous and analytical thinking in unpredictable, changing conditions • taking into account social, scientific and ethical aspects in the direction for further development of the society • the ability to present results of research and development to professional community • responsibility for leadership in a given scientific or professional field • planning his/her own development and development of the society in the context of scientific and technical progress

Source: Slovakian State Vocational Education Institute and EQF NCP (national coordination point), 2017.

A2.1.26. Finland

NQF levels in Finland are described in terms of learning outcomes in an integrated way as knowledge, skills and competences, and their interrelationships.

Descriptors for level 1 to 8

	Learning outcome descriptions of the Finnish national qualifications framework The person…
Level 1	• has a good command of the general knowledge and basic skills required for study and for carrying out simple tasks in a structured context under direct supervision • takes responsibility for his/her learning under guidance. Communicates verbally and responds to simple written communication in his/her mother tongue
Level 2	• has a good command of diverse general knowledge and the basic cognitive and practical skills that are required for making use of such knowledge when carrying out tasks and solving problems. Follows rules and uses diverse equipment and tools in a supervised operating environment demanding autonomy • takes responsibility and shows initiative • takes responsibility for his/her learning. Has the ability for lifelong learning. Knows how to work in a familiar learning and work community. Communicates diversely and interactively in different situations and produces texts in his/her mother tongue. Has the capability to interact in the second national language and at least one foreign language
Level 3	• has a good command of the knowledge base, principles, processes and general concepts in his/her field of work or study as well as certain cognitive and practical skills required for carrying out tasks and solving problems. Chooses and applies basic methods, tools, materials and information. Adapts his/her actions to the circumstances and the operating environment when solving problems • takes responsibility for completion of his/her tasks and works safely within a working or learning community. Has the ability to perform his/her tasks in a responsible manner showing initiative. Understands the significance of working life and entrepreneurship to individuals and society. Evaluates his/her own competence and actions, skills and choices pertaining to work or studies • has the ability for lifelong learning. Knows how to work in a familiar learning and work community. Communicates diversely and interactively in different situations and produces varied texts in his/her mother tongue. Has the ability to interact in the second national language and at least one foreign language, also internationally
Level 4	• has a good command of the knowledge base of his/her field of work or study in broad contexts and certain cognitive and practical skills as well as expression skills, and makes use of such knowledge and skills when solving problems specific to his/her field and carrying out tasks in the field. Works independently in operating environments that are usually predictable, but are subject to change • takes responsibility for completion of his/her tasks and works safely and responsibly within a work community. Works in an economical, productive and systematic manner, and organises his/her work, taking other actors into consideration. Is able to supervise routine tasks performed by others. Has the ability to work in an entrepreneurial manner in someone else's service or as an independent entrepreneur in the field. Evaluates his/her competence and scope of duties and improves actions relating to work or studies. Develops himself/herself and his/her work • has the ability for lifelong learning. Acts in a way that complies with ethical principles when interacting with different people in learning and working communities and other groups and networks. Communicates diversely and interactively in different situations and produces varied and also field-specific texts in his/her mother tongue • communicates in the second national language and interacts in his own field in at least one foreign language, also internationally.
Level 5	• has a good command of the comprehensive and/or specialised knowledge in his/her field and cognitive and practical skills and expression skills and makes use of such knowledge and skills when solving abstract problems creatively and performing tasks in the field. Understands the links between scopes of professional duties, his/her field

	Learning outcome descriptions of the Finnish national qualifications framework The person…
	and other fields, and how these connect with the big picture • functions as a specialist in his/her field and develops operations, products and/or services. When necessary, manages and supervises operating environments and operations that change unpredictably. Guides others and supervises tasks performed by others. Is well-prepared for working as an independent entrepreneur in the field. Evaluates and develops his/her own as well as others' performance and work • has the ability for lifelong learning. Acts in a way that complies with ethical principles when dealing with different people in learning and working communities and other groups and networks. Communicates verbally and in writing in his/her mother tongue both to audiences in the field and outside it. Communicates in the second national language and interacts in his/her own field in at least one foreign language, also internationally
Level 6	• has a good command of comprehensive and advanced knowledge of his/her field, involving a critical understanding and appraisal of theories, key concepts, methods and principles. Understands the extent and boundaries of professional functions and/or disciplines. Has advanced cognitive and practical skills, demonstrating mastery of the issues and the ability to apply knowledge and find creative solutions and applications required in a specialised professional, scientific or artistic field to solve complex or unpredictable problems • works independently in expert tasks of the field and in international cooperation or as an entrepreneur. Manages complex professional activities or projects. Can make decisions in unpredictable operating environments. In addition to evaluating and developing his/her own competence, he/she takes responsibility for the development of individuals and groups • has the ability for lifelong learning. Considers communal and ethical aspects when dealing with different people in learning and working communities and other groups and networks. Communicates to a good standard verbally and in writing in his/her mother tongue both to audiences in the field and outside it. Communicates and interacts in the second national language and is capable of international communication and interaction in his/her field in at least one foreign language
Level 7	• understands comprehensive and highly specialised concepts, methods and knowledge, corresponding to the specialised competence in his/her field, which are used as the basis for independent thinking and/or research. Understands issues that are at the interface between his/her field and different fields and evaluates them and new knowledge critically. Solves demanding problems, also creatively, in research and/or innovation, developing new knowledge and procedures and applies and combines knowledge from various fields • works independently in demanding, expert tasks of the field and in international cooperation or as an entrepreneur. Manages and develops complex, unpredictable and new strategic approaches. Manages things and/or people. Evaluates the activities of individuals and groups • accumulates knowledge and practices in his/her field and/or takes responsibility for the development of others • has the ability for lifelong learning. Considers communal and ethical aspects when dealing with different people in learning and working communities and other groups and networks. Communicates to a good standard verbally and in writing in his/her mother tongue both to audiences in the field and outside it. Communicates and interacts in the second national language and is capable of demanding international communication and interaction in his/her field in at least one foreign language

	Learning outcome descriptions of the Finnish national qualifications framework The person…
Level 8	• has a good command of extensive knowledge areas and contexts. Masters the most advanced and/or specialised and most profound knowledge, skills and/or theories, which are placed at the most advanced and/or specialised level of the field and at the interface between different fields. Finds creative solutions. Creates new knowledge in compliance with good scientific practice. Conducts independent and reliable scientific or artistic and professional research. Develops professional functions and/or his/her scientific or artistic field. Develops and applies new ideas, theories, approaches or processes in the most advanced operating environments • works independently in the most demanding expert tasks of the field and in international cooperation or as an entrepreneur. Manages things and/or people. Synthesises and prepares critical evaluations required to solve complex problems in research and/or innovation. Extends and redefines knowledge or professional practices • accumulates knowledge in his/her field and/or takes responsibility for the development of others • has the ability for lifelong learning. Considers communal and ethical aspects when dealing with different people in learning and working communities and other groups and networks. Communicates to a good standard verbally and in writing in his/her mother tongue, both to the scientific community and the general public on issues pertaining to his/her own research area and the entire discipline and/or professional field. Communicates and interacts in the second national language and is capable of demanding, international communication and interaction in his/her field in at least one foreign language

Source: Finnish Government, 2017; EDUFI (Finnish national agency for education) 2017.

A2.1.27. Sweden

Main NQF level descriptor elements in Sweden

Level descriptor elements		
Knowledge	**Skills**	**Competence**
experience-based and/or theoretical	performing tasks and solving problems	ability to take responsibility, to assess, to act autonomously and to cooperate

Descriptors for levels 1 to 8

	Knowledge The person can demonstrate:	**Skills** The person can:	**Competence** The person can:
Level 1	• basic general knowledge in a field of work or study • understanding of the essence of simple instructions and descriptions in a field of work or study	• carry out routine tasks in a field of work or study • follow simple instructions and descriptions in a field of work or study	• perform simple tasks under supervision • cooperate with others under supervision
Level 2	• broader knowledge in a field of work or study • knowledge of how facts can be gathered, compiled and presented	• apply specified rules, methods and tools to perform assigned tasks • follow instructions and descriptions in a field of work or study • search and process factual information in several fields of work or study	• perform work or studies with some autonomy and take responsibility for simple tasks • cooperate with others under supervision and contribute to collective results • assess how their own tasks have been performed
Level 3	• knowledge required to accomplish tasks within a field of work or study • knowledge of various procedures for collecting, organising and presenting information.	• select and use information using designated methods, tools and materials • accomplish tasks both alone and in a group within given time frames • autonomously search and process information • communicate experience and knowledge in his or her own language	• take responsibility for his or her own learning and for completion of assigned tasks • assess his or her own results and group results • assess information from various sources
Level 4	• depth of knowledge in a field of work or study • knowledge of models and methods in a field of work or study	• select and use relevant concepts, theories, models, materials, tools and methods in a particular field of work or study • follow instructions and perform defined practical and theoretical tasks within given time frames • communicate in at least one foreign language in the particular field of work or study	• take initiative, reflect, organise and carry out work and studies autonomously • deal autonomously with content in a particular field of work or study that could lead to further learning and professional development • critically assess and maintain an independent approach to source selection; • evaluate and draw conclusions from their own and

	Knowledge The person can demonstrate:	Skills The person can:	Competence The person can:
			group results • take responsibility in cooperation with others and, to a limited extent, lead and evaluate others' work
Level 5	• specialised knowledge in a field of work or study • knowledge and an overview of areas adjacent to their own field of work or study • knowledge of work processes and quality criteria within a field of work or study	• plan, perform and identify resources for carrying out specialised tasks; • solve complex problems within a field of work or study; • communicate commitments and solutions in a field of work or study in at least one foreign language.	• handle autonomously content in a field of work or study that leads to further learning and professional development; • supervise work or study activities and complete assigned projects.
Level 6	• advanced knowledge in a field of work or study • insight into the field's established methods of knowledge development • in-depth knowledge in some part of the field and an orientation in current research and development topics in the field	• identify, formulate, analyse and solve problems and perform complex tasks • communicate commitments and solutions within the field of work or study, in both national and international contexts	• evaluate information and methods within the field of work or study with respect to relevant social, ethical and scientific aspects • apply specialised knowledge for development in the field of work or study • take responsibility for managing individual and team performance at work
Level 7	• highly advanced knowledge in a field of work or study • in-depth knowledge of the research and development methods in the field • in-depth insight into the current research and development issues of the field	• participate in research and development work • identify and formulate questions • analyse, evaluate and solve advanced and complex tasks • communicate the research or the area's knowledge base and findings in both national and international contexts	• evaluate information, facts and methods within a field of work or study, with regards to relevant aspects • identify the need for further knowledge • assess the potential and limitations of a particular field • take responsibility for and manage their own area of work or study • take responsibility for the results of their own research and/or development work.
Level 8	• the most advanced and systematic knowledge in a field of work, study or research • current specialist knowledge within a well-defined sub-area and an overview of adjacent areas • mastery of methods of knowledge development in general, and of the methods of the particular field of work, study or research in particular	• analyse, synthesise and critically review and assess complex phenomena, questions and situations • plan and implement development or research work and other qualified tasks • communicate results of development and research in both national and international contexts	• evaluate the research or development work of the particular field of work or study • create and select their own research, innovation or development tasks • evaluate the qualified development work or the scientific possibilities and limitations • take responsibility for how the results of development or research are used • take responsibility for or lead the development of the profession and area of operation

Source: Government of the Kingdom of Sweden, 2015; Swedish National Agency for Higher Vocational Education, 2016.

A2.1.28. The United Kingdom

England, Northern Ireland and Wales

The regulated qualifications framework (RQF) introduced in October 2015 in England and Northern Ireland covers all vocational and academic qualifications regulated by the Office of Qualifications and Examinations Regulation (Ofqual) in England and the Council for Curriculum Examinations and Assessment Regulation (CCEA) in Northern Ireland. In Wales, since 2015, all regulated qualifications refer to the new RQF level descriptors, while non-regulated qualifications continue to refer to the original descriptors of the credit and qualifications framework for Wales (CQFW). Higher education qualifications are assigned levels by universities in accordance with the framework for higher education qualifications in England, Wales and Northern Ireland.

Main level descriptor elements of the regulated qualifications framework

Level descriptor elements	
Knowledge and understanding	**Skills**

Descriptors for levels 1 to 8

	Knowledge and understanding The holder…	Skills The holder can…
Entry 1	• progresses along a continuum that ranges from the most elementary of achievements to beginning to make use of knowledge and/or understanding that relate to the subject or immediate environment	• progress along a continuum that ranges from the most elementary of achievements to beginning to make use of skills that relate to the subject or the immediate environment
Entry 2	• has basic knowledge or understanding of a subject and/or can carry out simple, familiar tasks • knows the steps needed to complete simple activities	• carry out simple, familiar tasks and activities • follow instructions or use rehearsed steps to complete tasks and activities
Entry 3	• has basic knowledge and understanding to carry out structured tasks and activities in familiar contexts • knows and understands the steps needed to complete structured tasks and activities in familiar contexts	• carry out structured tasks and activities in familiar contexts • be aware of the consequences of actions for self and others
Level 1	• has basic factual knowledge of a subject and/or knowledge of facts, procedures and ideas to complete well-defined routine tasks and address simple problems	• use basic cognitive and practical skills to complete well-defined routine tasks and procedures • select and use relevant information

	Knowledge and understanding The holder…	Skills The holder can…
	• is aware of aspects of information relevant to the area of study or work	• identify whether actions have been effective
Level 2	• has knowledge and understanding of facts, procedures and ideas in an area of study or field of work to complete well-defined tasks and address straightforward problems • can interpret relevant information and ideas • is aware of a range of information that is relevant to the area of study or work	• select and use relevant cognitive and practical skills to complete well-defined, generally routine tasks and address straightforward problems • identify, gather and use relevant information to inform actions • identify how effective actions have been
Level 3	• has factual, procedural and theoretical knowledge and understanding of a subject or field of work to complete tasks and address problems that while well-defined, may be complex and non-routine • can interpret and evaluate relevant information and ideas. • is aware of the nature of the area of study or work • is aware of different perspectives or approaches within the area of study or work	• identify, select and use appropriate cognitive and practical skills, methods and procedures to address problems that while well-defined, may be complex and non-routine • use appropriate investigation to inform actions • review how effective methods and actions have been
Level 4	• has practical, theoretical or technical knowledge and understanding of a subject or field of work to address problems that are well defined but complex and non-routine • can analyse, interpret and evaluate relevant information and ideas • is aware of the nature and approximate scope of the area of study or work • has an informed awareness of different perspectives or approaches within the area of study or work	• identify, adapt and use appropriate cognitive and practical skills to inform actions and address problems that are complex and non-routine while normally fairly well-defined • review the effectiveness and appropriateness of methods, actions and results
Level 5	• has practical, theoretical or technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts • can analyse, interpret and evaluate relevant information, concepts and ideas • is aware of the nature and scope of the area of study or work • understands different perspectives, approaches or schools of thought and the reasoning behind them	• determine, adapt and use appropriate methods, cognitive and practical skills to address broadly defined, complex problems • use relevant research or development to inform actions • evaluate actions, methods and results
Level 6	• has advanced practical, conceptual or technological knowledge and understanding of a subject or field of work to create ways forward in contexts where there are many interacting factors • understands different perspectives, approaches or schools of thought and the theories that underpin them • can critically analyse, interpret and evaluate complex information, concepts and ideas	• determine, refine, adapt and use appropriate methods and advanced cognitive and practical skills to address problems that have limited definition and involve many interacting factors • use and, where appropriate, design relevant research and development to inform actions • evaluate actions, methods and results and their implications
Level 7	• reformulates and uses practical, conceptual or technological knowledge and understanding of a subject or field of work to create ways forward in	• use specialised skills to conceptualise and address problematic situations that involve many interacting factors

	Knowledge and understanding The holder…	Skills The holder can…
	contexts where there are many interacting factors • critically analyses, interprets and evaluates complex information, concepts and theories to produce modified conceptions • understands the wider contexts in which the area of study or work is located • understands current developments in the area of study or work • understands different theoretical and methodological perspectives and how they affect the area of study or work	• determine and use appropriate methodologies and approaches. • design and undertake research, development or strategic activities to inform or produce change in the area of work or study • critically evaluate actions, methods and results and their short-and long-term implications
Level 8	• develops original practical, conceptual or technological understanding to create ways forward in contexts that lack definition and where there are many complex, interacting factors • critically analyses, interprets and evaluates complex information, concepts and theories to produce new knowledge and theories • understands and reconceptualises the wider contexts in which the field of knowledge or work is located • extends a field of knowledge or work by contributing original knowledge and thinking • exercises critical understanding of different theoretical and methodological perspectives and how they affect the field of knowledge or work	• use advanced and specialised skills and techniques to conceptualise and address problematic situations that involve many complex, interacting factors • formulate and use appropriate methodologies and approaches • initiate, design and undertake research, development or strategic activities that extend or produce significant change in the field of work or study • critically evaluate actions, methods and results and their short- and long-term implications for the field of work or knowledge and its wider context

Source: Ofqual, 2015.

Wales

There is no single set of level descriptors for all of the qualifications incorporated into the current CQFW. The CQFW, since 2015, is considered as a form of meta-framework which contains three pillars: regulated qualifications, higher education, and quality assured lifelong learning.

Regulated qualifications, which include all qualifications that are awarded by bodies that are recognised by Qualifications Wales, must be assigned to levels by awarding bodies in accordance with the qualification and component levels document ([45]) and the standard conditions of recognition for awarding bodies published by Qualifications Wales.

Higher education qualifications must be assigned to levels by universities in accordance with the framework for higher education qualifications in England, Wales and Northern Ireland ([46]).

The quality assured lifelong learning pillar of the QCFW is particular to Wales and represents the framing of other forms of education within the qualifications framework. These types of qualifications can be assigned to levels based on the 'autonomy and accountability' category, in addition to 'knowledge and understanding' and 'application and action', as outlined below.

Main level descriptor elements of the CQFW (quality assured lifelong learning pillar)

Level descriptor elements		
Knowledge and understanding	**Application and action**	**Autonomy and accountability**

([45]) http://qualificationswales.org/media/1860/qualification-and-component-levels-eng-21-june.pdf

([46]) http://www.qaa.ac.uk/en/Publications/Documents/Framework-Higher-Education-Qualifications-08.pdf

Descriptors for levels 1 to 8 (quality assured lifelong learning pillar)

	Summary	Knowledge and understanding	Application and action	Autonomy and accountability
Entry level 1	*Entry level 1 recognises progress along a continuum that ranges from the most elementary of achievements to beginning to make use of skills, knowledge, or understanding that relate to the immediate environment.*			
Entry level 2	*Achievement at entry level 2 reflects the ability to make use of skills, knowledge and understanding to carry out simple, familiar tasks and activities with guidance.*	• use knowledge or understanding to carry out simple, familiar activities • know the steps needed to complete simple activities.	• carry out simple, familiar tasks and activities • follow instructions or use rehearsed steps to complete tasks and activities	• with appropriate guidance begin to take some responsibility for the outcomes of simple activities • actively participate in simple and familiar activities
Entry level 3	*Achievement at entry level 3 reflects the ability to make use of skills, structured tasks, knowledge, and understanding to carry out structured tasks and activities in familiar contexts, with appropriate guidance where needed.*	• use knowledge or understanding to carry out structured tasks and activities in familiar contexts • know and understand the steps needed to complete structured tasks and activities in familiar contexts	• carry out structured tasks and activities in familiar contexts • be aware of the consequences of actions for self and others	• with appropriate guidance take responsibility for the outcomes of structured activities • actively participate in activities in familiar contexts
Level 1	*Achievement at level 1 reflects the ability to use relevant knowledge, skills and procedures to complete routine tasks. It includes responsibility for completing tasks and procedures subject to direction or guidance.*	• use knowledge of facts, procedures and ideas to complete well-defined, routine tasks • be aware of information relevant to the area of study or work	• complete well-defined, routine tasks • use relevant skills and procedures. • select and use relevant information • identify whether actions have been effective	• take responsibility for completing tasks and procedures subject to direction or guidance as needed
Level 2	*Achievement at level 2 reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problems. It includes taking responsibility for completing tasks and procedures and exercising autonomy and judgement subject to overall direction or guidance.*	• use understanding of facts, procedures and ideas to complete well-defined tasks and address straightforward problems • interpret relevant information and ideas • be aware of the types of information that are relevant to the area of study or work	• complete well-defined, generally routine tasks and address straightforward problems • select and use relevant skills and procedures • identify, gather and use relevant information to inform actions • identify how effective actions have been	• take responsibility for completing tasks and procedures • exercise autonomy and judgement subject to overall direction or guidance

	Summary	Knowledge and understanding	Application and action	Autonomy and accountability
Level 3	*Achievement at level 3 reflects the ability to identify and use relevant understanding, methods and skills to complete tasks and address problems that, while well-defined, have a measure of complexity. It includes taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgement within limited parameters. It also reflects awareness of different perspectives or approaches within an area of study or work.*	• use factual, procedural and theoretical understanding to complete tasks and address problems that, while well-defined, may be complex and non-routine • interpret and evaluate relevant information and ideas. • be aware of the nature of the area of study or work • have awareness of different perspectives or approaches within the area of study or work	• address problems that, while well-defined, may be complex and non-routine • identify, select and use appropriate skills, methods and procedures • use appropriate investigation to inform actions • review how effective methods and actions have been	• take responsibility for initiating and completing tasks and procedures, including, where relevant, responsibility for supervising or guiding others • exercise autonomy and judgement within limited parameters
Level 4	*Achievement at level 4 reflects the ability to identify and use relevant understanding, methods and skills to address problems that are well-defined but complex and non-routine. It includes taking responsibility for overall courses of action as well as exercising autonomy and judgement within broad parameters. It also reflects understanding of different perspectives or approaches within an area of study or work.*	• use practical, theoretical or technical understanding to address problems that are well-defined but complex and non-routine • analyse, interpret and evaluate relevant information and ideas • be aware of the nature and approximate scope of the area of study or work • have an informed awareness of different perspectives or approaches within the area of study or work	• address problems that are well-defined but complex and non-routine • identify, adapt and use appropriate methods and skills • use appropriate investigation to inform actions • review the effectiveness and appropriateness of methods, actions and results	• take responsibility for courses of action, including, where relevant, responsibility for the work of others • exercise autonomy and judgement within broad parameters
Level 5	*Achievement at level 5 reflects the ability to identify and use relevant understanding, methods and skills to address broadly defined, complex problems. It includes taking responsibility for planning and developing courses of action as well as exercising autonomy and judgement within broad parameters. It also reflects understanding of different perspectives, approaches or schools of thought and the reasoning behind them.*	• use practical, theoretical or technological understanding to find ways forward in broadly defined, complex contexts • analyse, interpret and evaluate relevant information, concepts and ideas • be aware of the nature and scope of the area of study or work • understand different perspectives, approaches or schools of thought and the reasoning behind them	• address broadly defined, complex problems • determine, adapt and use appropriate methods and skills • use relevant research or development to inform actions. • evaluate actions, methods and results	• take responsibility for planning and developing courses of action, including where relevant responsibility for the work of others • exercise autonomy and judgement within broad parameters

	Summary	Knowledge and understanding	Application and action	Autonomy and accountability
Level 6	*Achievement at level 6 reflects the ability to refine and use relevant understanding, methods and skills to address complex problems that have limited definition. It includes taking responsibility for planning and developing courses of action that are able to underpin substantial change or development, as well as exercising broad autonomy and judgement. It also reflects an understanding of different perspectives, approaches or schools of thought and the theories that underpin them.*	• refine and use practical, conceptual or technological understanding to create ways forward in contexts where there are many interacting factors • critically analyse, interpret and evaluate complex information, concepts and ideas • understand the context in which the area of study or work is located • be aware of current developments in the area of study or work • understand different perspectives, approaches or schools of thought and the theories that underpin them	• address problems that have limited definition and involve many interacting factors • determine, refine, adapt and use appropriate methods and skills • use and, where appropriate, design relevant research and development to inform actions • evaluate actions, methods and results and their implications	• take responsibility for planning and developing courses of action that are capable of underpinning substantial changes or developments • initiate and lead tasks and processes, taking responsibility, where relevant, for the work and roles of others • exercise broad autonomy and judgement
Level 7	*Achievement at level 7 reflects the ability to reformulate and use relevant understanding, methodologies and approaches to address problematic situations that involve many interacting factors. It includes taking responsibility for planning and developing courses of action that initiate or underpin substantial change or development, as well as exercising broad autonomy and judgement. It also reflects an understanding of relevant theoretical and methodological perspectives and how they affect their area of study or work.*	• reformulate and use practical, conceptual or technological understanding to create ways forward in contexts where there are many interacting factors • critically analyse, interpret and evaluate complex information, concepts and theories to produce modified conceptions • understand the wider contexts in which the area of study or work is located • understand current developments in the area of study or work • understand different theoretical and methodological perspectives and how they affect the area of study or work	• conceptualise and address problematic situations that involve many interacting factors • determine and use appropriate methodologies and approaches • design and undertake research, development or strategic activities to inform the area of work or study or produce organisational or professional change • critically evaluate actions, methods and results and their short- and long-term implications	• take responsibility for planning and developing courses of action that initiate or underpin substantial changes or developments • exercise broad autonomy and judgement across a significant area of work or study • initiate and lead complex tasks and processes, taking responsibility, where relevant, for the work and roles of others

	Summary	Knowledge and understanding	Application and action	Autonomy and accountability
Level 8	*Achievement at level 8 reflects the ability to develop original understanding and extend an area of knowledge or professional practice. It reflects the ability to address problematic situations that involve many complex interacting factors through initiating, designing and undertaking research, development or strategic activities. It involves the exercise of broad autonomy, judgement and leadership in sharing responsibility for the development of a field of work or knowledge or for creating substantial professional or organisational change. It also reflects a critical understanding of relevant theoretical and methodological perspectives and how they affect the field of knowledge or work.*	• develop original practical, conceptual or technological understanding to create ways forward in contexts that lack definition and where there are many complex, interacting factors • critically analyse, interpret and evaluate complex information, concepts and theories to produce new knowledge and theories • understand and reconceptualise the wider contexts in which the field of knowledge or work is located • extend a field of knowledge or work by contributing original knowledge and thinking • exercise critical understanding of different theoretical and methodological perspectives and how they affect the field of knowledge or work	• conceptualise and address problematic situations that involve many complex interacting factors • formulate and use appropriate methodologies and approaches • initiate, design and undertake research, development or strategic activities that extend the field of work or knowledge or result in significant organisational or professional change • critically evaluate actions, methods and results and their short- and long-term implications for the field of work or knowledge and its wider context	• take responsibility for planning and developing courses of action that have a significant impact on a field of work or knowledge or result in substantial organisational or professional change • exercise broad autonomy, judgement and leadership as a leading practitioner or scholar sharing responsibility for the development of a field of work or knowledge or for substantial organisational or professional change • take responsibility for the advancement of professional practice

Source: Government of Wales, 2009.

Scotland

Main characteristics used for defining the Scottish credit and qualifications framework (SCQF) level descriptors in Scotland

Knowledge and understanding	Practice: applied knowledge, skills and understanding	Generic cognitive skills	Communication, numeracy and information and communication technology (ICT) skills	Autonomy, accountability and working with others

Descriptors for levels 1 to 12

Level 1	
Knowledge and understanding	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Practice: applied knowledge, skills and understanding	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Generic cognitive skills	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Communications, ICT and numeracy skills	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Autonomy, accountability and working with others	SCQF level 1 recognises learning development and achievement that ranges from participation in experiential situations to the achievement of basic tasks, with varying degrees of support.
Level 2	
Knowledge and understanding	Demonstrate and/or work with: • basic knowledge • simple facts and ideas
Practice: applied knowledge, skills and understanding	• relate knowledge to a few simple everyday contexts with prompting • use a few very simple skills • carry out, with guidance, a few familiar tasks • use, under supervision, basic tools and materials
Generic cognitive skills	• use rehearsed stages for solving problems • operate in personal and/or everyday contexts • take some account, with prompting, of identified consequences of action
Communications, ICT and numeracy skills	Use simple skills with assistance, for example: • produce and respond to a limited range of very simple written and oral communications in familiar/routine contexts • carry out a limited range of simple tasks to process and access information • use a limited range of simple numerical and graphical data in familiar and everyday contexts
Autonomy, accountability and working with others	• work alone or with others on simple routine, familiar tasks under frequent directive supervision • identify, given simple criteria, some strengths and/or weaknesses of the work
Level 3	
Knowledge and understanding	Demonstrate and/or work with: • basic knowledge • simple facts and ideas in, and associated with, a subject, discipline, sector

Practice: applied knowledge, skills and understanding	• relate knowledge to personal and/or everyday contexts with some prompting • use a few basic, routine skills to undertake familiar and routine tasks • complete pre-planned tasks • use, with guidance, basic tools and materials safely and effectively
Generic cognitive skills	• identify with some prompting a process to deal with a situation or issue • operate in familiar contexts using given criteria • take account of some identified consequences of action
Communications, ICT and numeracy skills	Use simple skills, for example: • produce and respond to simple written and oral communication in familiar/routine contexts • carry out simple tasks to process and access information • use simple numerical and graphical data in everyday contexts
Autonomy, accountability and working with others	• work alone or with others on simple tasks under frequent directive supervision • participate in the setting of goals, timelines, etc. • participate in the review of completed work and the identification of ways of improving practices and processes • identify, given simple criteria, own strengths and weaknesses relative to the work
Level 4	
Knowledge and understanding	Demonstrate and/or work with: • basic knowledge • some simple facts and ideas in, about, and associated with, a subject/discipline, sector • knowledge of basic processes, materials and terminology
Practice: applied knowledge, skills and understanding	• relate knowledge to personal and/or practical contexts • use a few skills to complete straightforward tasks with some non-routine elements • prepare for familiar and routine tasks • select and use, with guidance, appropriate tools and materials safely and effectively
Generic cognitive skills	• use, with guidance, given stages of a process to deal with a problem, situation or issue • operate in straightforward contexts • identify and/or take account of some of the consequences of action/inaction
Communications, ICT and numeracy skills	Use some routine skills, for example: • produce and respond to simple but detailed written and oral communication in familiar contexts • use the basic features of familiar ICT applications to process and obtain information • use basic numerical and graphical data in straightforward and familiar contexts
Autonomy, accountability and working with others	• work alone or with others on tasks with regular, directive supervision • contribute to the setting of goals, timelines, etc. • contribute to the review of completed work and offer suggestions for improving practices and processes • identify own strengths and weaknesses relative to the work

Level 5	
Knowledge and understanding	Demonstrate and/or work with: • basic knowledge • a range of simple facts, ideas and theories in, about, and associated with, a subject, discipline, sector • knowledge and understanding of basic processes, materials and terminology
Practice: applied knowledge, skills and understanding	• relate knowledge and ideas to personal and/or practical contexts • use a range of skills associated with the subject, discipline, sector to complete some routine and non-routine tasks • plan and organise both familiar and unfamiliar tasks • select appropriate tools and materials and use them safely and effectively • adjust tools where necessary following safe practices
Generic cognitive skills	• use a process to deal with a problem, situation or issue that is straightforward • operate in a familiar context, but where there is a need to take account of/or use additional information of different kinds, some of which will be theoretical or hypothetical
Communications, ICT and numeracy skills	Use a range of routine skills, for example: • produce and respond to detailed written and oral communication in familiar contexts • use standard ICT applications to process, obtain and combine information • use a range of numerical and graphical data in routine contexts that may have some non-routine elements
Autonomy, accountability and working with others	• work alone or with others on tasks with minimum directive supervision • agree goals and responsibilities for self and/or work team • take lead responsibility for some tasks • show an awareness of own and/or others' roles, responsibilities and requirements in carrying out work and contribute to the evaluation and improvement of practices and processes
Level 6	
Knowledge and understanding	Demonstrate and/or work with: • an appreciation of the body of knowledge that constitutes a subject, discipline, sector • a range of knowledge, facts, theories ideas, properties, materials, terminology, practices and techniques about, and associated with, a subject, discipline, sector • relating the subject, discipline, sector to a range of practical and/or commonplace applications
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: • in known, practical contexts • in using some of the basic, routine practices, techniques and/or materials associated with the subjects, discipline, sector • in exercising these in routine contexts that may have non-routine elements • in planning how skills will be used to address set situations and/or problems and adapt these as necessary
Generic cognitive skills	• obtain, organise and use factual, theoretical and/or hypothetical information in problem solving • make generalisations and predictions • draw conclusions and suggest solutions
Communications, ICT and numeracy skills	Use a wide range of skills, for example: • produce and respond to detailed and relatively complex written and oral communication in both familiar and unfamiliar contexts • select and use standard ICT applications to process, obtain and combine information • use a wide range of numerical and graphical data in routine contexts which may have non-routine elements

Autonomy, accountability and working with others	• take responsibility for carrying out a range of activities where the overall goal is clear, under non-directive supervision • exercise some supervisory responsibility for the work of others and lead established teams in the implementation of routine work within a defined and supervised structure • manage limited resources within defined and supervised areas of work • take account of roles and responsibilities related to the tasks being carried out and take a significant role in the evaluation of work and the improvement of practices and processes
Level 7	
Knowledge and understanding	Demonstrate and/or work with: • an overall appreciation of the body of knowledge that constitutes a subject/discipline/sector • knowledge that is embedded in the main theories, concepts and principles of the subject/discipline/sector • an awareness of the dynamic nature of knowledge and understanding • an understanding of the difference between explanations based on evidence and/or research and other sources, and of the importance of this difference
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: • in practical contexts • in using some of the basic and routine professional skills, techniques, practices and/or materials associated with the subject/discipline/sector • to practise these in both routine and non-routine contexts
Generic cognitive skills	• present and evaluate arguments, information and ideas that are routine to a subject/discipline/sector • use a range of approaches to address defined and/or routine problems and issues within familiar contexts
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced skills associated with a subject/discipline/sector, for example: • convey complex ideas in well-structured and coherent form • use a range of forms of communication effectively in both familiar and unfamiliar contexts • select and use standard ICT applications to process and obtain a variety of information and data • use a range of numerical and graphical skills in combination • use numerical and graphical data to measure progress and achieve goals/targets
Autonomy, accountability and working with others	• exercise some initiative and independence in carrying out defined activities at a professional level in practice or in a subject/discipline/sector • accept supervision in less familiar areas of work • exercise some managerial or supervisory responsibility for the work of others within a defined and supervised structure • manage limited resources within defined areas of work • take the lead in implementing agreed plans in familiar or defined contexts • take account of own and others' roles and responsibilities when carrying out and evaluating tasks • work, under guidance, with others to acquire an understanding of current professional practice

Level 8	
Knowledge and understanding	Demonstrate and/or work with: • knowledge of the scope, defining features, and main areas of the subject/discipline/sector • specialist knowledge in some areas • a discerning understanding of a defined range of core theories, concepts, principles and terminology • awareness and understanding of some major current issues and specialisms • awareness and understanding of research and equivalent scholarly/academic processes
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: • in using a range of professional skills, techniques, practices and/or materials associated with the subject/discipline/sector, a few of which are advanced and/or complex • in carrying out routine lines of enquiry, development or investigation into professional level problems and issues • to adapt routine practices within accepted standards
Generic cognitive skills	• undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues that are within the common understandings in a subject/discipline/sector • use a range of approaches to formulate and critically evaluate evidence-based solutions/responses to defined and/or routine problems and issues
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced and specialised skills associated with a subject/discipline/sector, for example: • convey complex information to a range of audiences and for a range of purposes • use a range of standard ICT applications to process and obtain data • use and evaluate numerical and graphical data to measure progress and achieve goals/targets
Autonomy, accountability and working with others	• exercise autonomy and initiative in some activities at a professional level in practice or in a subject/discipline/sector • exercise managerial responsibility for the work of others within a defined structure • manage resources within defined areas of work • take the lead on planning in familiar or defined contexts • practise in ways that show awareness of own and others' roles, responsibilities and contributions when carrying out and evaluating tasks • work, under guidance, with others to acquire an understanding of current professional practice • manage, under guidance, ethical and professional issues in accordance with current professional and/or ethical codes or practices

Level 9	
Knowledge and understanding	Demonstrate and/or work with: • an understanding of the scope and defining features of a subject/discipline/sector, and an integrated knowledge of its main areas and boundaries • a critical understanding of a range of the principles, principal theories, concepts and terminology of the subject/discipline/sector • knowledge of one or more specialisms that is informed by forefront developments
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: • in using a range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector • in using a few skills, techniques, practices and/or materials that are specialised and/or advanced • in practising routine methods of enquiry and/or research • to practise in a range of professional level contexts that include a degree of unpredictability
Generic cognitive skills	• undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues in a subject/discipline/sector • identify and analyse routine professional problems and issues • draw on a range of sources in making judgements
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced and specialised skills in support of established practices in a subject/discipline/sector, for example: • present or convey, formally and informally, information on standard/mainstream topics in the subject/discipline/sector to a range of audiences • use a range of ICT applications to support and enhance work • interpret, use and evaluate numerical and graphical data to set and achieve goals/targets
Autonomy, accountability and working with others	• exercise autonomy and initiative in some activities at a professional level in practice or in a subject/discipline/sector • exercise managerial responsibility for the work of others and for a range of resources • practise in ways that show awareness of own and others' roles and responsibilities • work, under guidance, with specialist practitioners • seeking guidance where appropriate, manage ethical and professional issues in accordance with current professional and/or ethical codes or practices

Level 10	
Knowledge and understanding	Demonstrate and/or work with: • knowledge that covers and integrates most of the principal areas, features, boundaries, terminology and conventions of a subject/discipline/sector • a critical understanding of the principal theories, concepts and principles • detailed knowledge and understanding in one or more specialisms, some of which is informed by, or at the forefront of, a subject/discipline/sector • knowledge and understanding of the ways in which the subject/discipline/sector is developed, including a range of established techniques of enquiry or research methodologies
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: • in using a wide range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector • in using a few skills, techniques, practices and/or materials that are specialised, advanced and/or at the forefront of a subject/discipline/sector • in executing a defined project of research, development or investigation and in identifying and implementing relevant outcomes • to practise in a range of professional level contexts that include a degree of unpredictability and/or specialism
Generic cognitive skills	• critically identify, define, conceptualise and analyse complex/professional problems and issues • offer professional insights, interpretations and solutions to problems and issues • demonstrate some originality and creativity in dealing with professional issues • critically review and consolidate knowledge, skills, practices and thinking in a subject/discipline/sector • make judgements where data/information is limited or comes from a range of sources
Communications, ICT and numeracy skills	Use a wide range of routine skills and some advanced and specialised skills in support of established practices in a subject/discipline/sector, for example: • present or convey, formally and informally, information about specialised topics to informed audiences • communicate with peers, senior colleagues and specialists on a professional level • use a range of ICT applications to support and enhance work at this level and adjust features to suit purpose • interpret, use and evaluate a wide range of numerical and graphical data to set and achieve goals/targets
Autonomy, accountability and working with others	• exercise autonomy and initiative in professional/equivalent activities • exercise significant managerial responsibility for the work of others and for a range of resources • practise in ways that show awareness of own and others' roles and responsibilities • work, under guidance, in a peer relationship with specialist practitioners • work with others to bring about change, development and/or new thinking • manage complex ethical and professional issues in accordance with current professional and/or ethical codes or practices • recognise the limits of these codes and seek guidance where appropriate

Level 11	
Knowledge and understanding	Demonstrate and/or work with: • knowledge that covers and integrates most, if not all, of the main areas of the subject/discipline/sector – including their features, boundaries, terminology and conventions • a critical understanding of the principal theories, concepts and principles • a critical understanding of a range of specialised theories, concepts and principles • extensive, detailed and critical knowledge and understanding in one or more specialisms, much of which is at, or informed by, developments at the forefront • a critical awareness of current issues in a subject/discipline/sector and one or more specialisms
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: • in using a significant range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector • in using a range of specialised skills, techniques, practices and/or materials that are at the forefront of, or informed by forefront developments • in applying a range of standard and specialised research and/or equivalent instruments and techniques of enquiry • in planning and executing a significant project of research, investigation or development • in demonstrating originality and/or creativity, including in practices • to practise in a wide and often unpredictable variety of professional level contexts
Generic cognitive skills	• apply critical analysis, evaluation and synthesis to forefront issues, or issues that are informed by forefront developments in the subject/discipline/sector • identify, conceptualise and define new and abstract problems and issues • develop original and creative responses to problems and issues • critically review, consolidate and extend knowledge, skills, practices and thinking in a subject/discipline/sector • deal with complex issues and make informed judgements in situations in the absence of complete or consistent data/information
Communications, ICT and numeracy skills	Use a wide range of routine skills and a range of advanced and specialised skills as appropriate to a subject/discipline/sector, for example: • communicate, using appropriate methods, to a range of audiences with different levels of knowledge/expertise • communicate with peers, more senior colleagues and specialists • use a wide range of ICT applications to support and enhance work at this level and adjust features to suit purpose • undertake critical evaluations of a wide range of numerical and graphical data
Autonomy, accountability and working with others	• exercise substantial autonomy and initiative in professional and equivalent activities • take responsibility for own work and/or significant responsibility for the work of others • take significant responsibility for a range of resources • work in a peer relationship with specialist practitioners • demonstrate leadership and/or initiative and make an identifiable contribution to change and development and/or new thinking • practise in ways which draw on critical reflection on own and others' roles and responsibilities • manage complex ethical and professional issues and make informed judgements on issues not addressed by current professional and/or ethical codes or practices

Level 12	
Knowledge and understanding	Demonstrate and/or work with: • a critical overview of a subject/discipline/sector, including critical understanding of the principal theories, concepts and principles • a critical, detailed and often leading knowledge and understanding at the forefront of one or more specialisms • knowledge and understanding that is generated through personal research or equivalent work that makes a significant contribution to the development of the subject/discipline/sector
Practice: applied knowledge, skills and understanding	Apply knowledge, skills and understanding: • in using a significant range of the principal professional skills, techniques, practices and/or materials associated with the subject/discipline/sector • in using and enhancing a range of complex skills, techniques, practices and/or materials that are at the forefront of one or more specialisms • in applying a range of standard and specialised research and/or equivalent instruments and techniques of enquiry • in designing and executing research, investigative or development projects to deal with new problems and issues • in demonstrating originality and creativity in the development and application of new knowledge, understanding and practices • to practise in the context of new problems and circumstances
Generic cognitive skills	• apply a constant and integrated approach to critical analysis, evaluation and synthesis of new and complex ideas, information and issues • identify, conceptualise and offer original and creative insights into new, complex and abstract ideas, information and issues • develop original and creative responses to problems and issues • deal with complex and/or new issues and make informed judgements in the absence of complete or consistent data/information
Communications, ICT and numeracy skills	Use a wide range of routine skills and a significant range of advanced and specialised skills as appropriate to a subject/discipline/sector, for example: • communicate at an appropriate level to a range of audiences and adapt communication to the context and purpose • communicate at the standard of published academic work and/or critical dialogue and review with peers and experts in other specialisms/sectors • use a range of ICT applications to support and enhance work at this level and specify software requirements to enhance work • critically evaluate numerical and graphical data
Autonomy, accountability and working with others	• demonstrate substantial authority and exercise a high level of autonomy and initiative in professional and equivalent activities • take full responsibility for own work and/or significant responsibility for the work of others • take significant responsibility for a range of resources • demonstrate leadership and/or originality in tackling and resolving problems and issues • practise in ways which are reflective, self-critical and based on research/evidence • manage complex ethical and professional issues and make informed judgements on new and emerging issues not addressed by current professional and/or ethical codes or practices

Source: SCQF partnership, 2012.

A2.2. NQF level descriptors of other European countries participating in the EQF implementation

A2.2.1. Albania

Main NQF level descriptor elements in Albania

Level descriptor elements		
Knowledge	**Skills**	**Competence**

Descriptors for levels 1 to 8

	Knowledge, skills and competence
Level 1	• general basic knowledge • basic skills necessary to perform simple tasks • working or studying under direct supervision within a structured framework
Level 2	• basic factual knowledge about an area of study or work • basic cognitive and practical knowledge to use relevant information in order to perform tasks and solve routine problems using simple rules and tools • working or studying under supervision with certain independence/autonomy
Level 3	• knowledge on facts, principles, processes and general concepts in an area of work or study • a number of cognitive and practical skills necessary for task performance and problem solving through selection and for implementation of methods, tools, materials and basic information • accountability for task performance at work and in studies • adaptation to certain circumstances for problem solution
Level 4	• theoretical and factual knowledge in a broader context of work or study • a number of inclusive cognitive and practical skills necessary for solution of specific problems in an area of work or study • self-management within the guiding framework of work or study, which is usually forecast but it might be changed • supervision of others' routine work by taking some responsibilities for assessment and improvement of work or study activities
Level 5	• comprehensive specialised factual and theoretical knowledge within an area of work or study to a certain level • a number of comprehensive cognitive and practical skills needed for creative problem solving • management and supervision in the framework of work or study activities in various situations • analysis and improvement of personal and others' performance
Level 6	• advanced knowledge in an area of work or study including critical analysis of theories and principles • advanced knowledge that demonstrates proficiency and innovation necessary to solve complex and unpredictable problems in an area of work or study • taking responsibility for management and professional development of individuals or groups
Level 7	• very specialised knowledge, some of which at a contemporary advanced level, in an area of work or study as basis for original thinking and research • critical analysis of knowledge in an area or in the interaction of various areas • specialised skills for problem solving necessary for research and/or innovation in order to develop new knowledge and procedures as well as to integrate knowledge from various areas

	Knowledge, skills and competence
	• management and transformation of work or study contexts which are complex, unpredictable and which require new strategic approaches • taking responsibility to contribute in knowledge or professional practice and/or to review strategic performance of staff/group
Level 8	• knowledge in the most advanced level of an area of work or study, as well as in the interaction between areas • very advanced and specialised skills and techniques which include necessary synthesis and evaluations for critical problem solving in research and/or innovation, with extension and redefinition of existing knowledge or professional practices • demonstrating full authority, innovation, independence, research and professional integrity, continuous dedication to developing new ideas and processes in the most advanced context of work or study including research

Source: Assembly of the Republic of Albania, 2010.

A2.2.2. Bosnia and Herzegovina

Main level descriptor elements of the qualifications framework of Bosnia and Herzegovina

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• factual • theoretical	• cognitive • physical • social	• autonomy • responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence
	The person…	The person…	The person…
Level 1	• has elementary general knowledge and demonstrates its understanding	• 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 it in oral and written form	**Professional competence:** • demonstrates capacity to perform basic tasks in a familiar environment under permanent and professional supervision **Personal competence ([47]):** • displays readiness to apply knowledge and assume limited responsibility for performance of simple tasks in a familiar environment
Level 2	• has narrow 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)	• demonstrates a narrow range of practical skills for a certain field (e.g. the use of simple methods, tools, instruments and materials) in a familiar environment • demonstrates simple concrete logical thinking 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**: • 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:** • takes limited responsibility for performance of simple and/or less complex tasks in a familiar environment and for own learning
Level 3	• possesses practical and theoretical knowledge for a certain field (facts, principles,	• demonstrates a wider range of practical skills in a certain field in a changing environment • demonstrates concrete creative and simple abstract	**Professional competence:** • demonstrates limited practical experience in work and learning

([47]) Including key competences for lifelong learning.

	Knowledge	Skills	Competence
	The person…	The person…	The person…
	processes and general concepts related to the field of work or learning) • demonstrates capacity to analyse facts within the field of work or learning	thinking 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	• demonstrates capacity to perform tasks by directing and adjusting his/her own behaviour within the given guidelines in a changing environment **Personal competence:** • 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
Level 4	• 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	• demonstrates ability to apply general and specialised knowledge and skills in a changing environment • demonstrates ability of simple abstract logical and creative thinking 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:** • demonstrates practical experience in work or learning • demonstrates capacity to perform complex tasks and independently solve problems • has capacity to supervise others **Personal competence:** • 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.
Level 5	• 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	• 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 for complex use of methods, instruments, tools and materials and performance of complex moves in a partially unpredictable environment, as well as for development of simple methods, instruments, tools and materials	**Professional competence:** • 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/coordination 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:** • demonstrates autonomy in learning and positive attitude towards key competences in lifelong

	Knowledge	Skills	Competence
	The person…	The person…	The person…
			learning, such as learn to learn, communication in foreign languages, digital competences, sense of initiative and entrepreneurship
Level 6	• demonstrates knowledge and understanding in a field of study that builds upon their secondary education and which is typically at a level, while supported by appropriate learning resources (texts, information and communication technologies), including some aspects that will be informed by knowledge of the frontier of a given field of study	• 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:** • 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:** • 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
Level 7	• is able to demonstrate a systematic understanding and mastery 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 that provides a basis or opportunity for originality in developing and/or applying ideas, usually within a research context	• demonstrates ability to apply knowledge and understanding, and problem-solving abilities in a 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 frontier of the discipline - evaluation of different methodologies, development of critical opinion and raising of alternative solutions	**Professional competence:** • 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:** • 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

	Knowledge	Skills	Competence
	The person…	The person…	The person…
			• 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
Level 8	• has demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field	• has demonstrated the ability to design research projects 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 initiator and implementer of development of a knowledge-based society, constantly contributing to development of new techniques, ideas, or approaches	**Professional competence:** • is capable of critical analysis, evaluation and synthesis of new and complex ideas **Personal competence:** • can communicate with peers, the larger scholarly community and with society in general about areas of expertise

Source: Council of Ministers of Bosnia and Herzegovina, 2010.

A2.2.3. The former Yugoslav Republic of Macedonia

Main NQF level descriptor elements in the former Yugoslav Republic of Macedonia

Level descriptor elements		
Knowledge and understanding	**Skills**	**Competence**

Descriptors for levels 1 to 8

	Knowledge and understanding	Skills	Competence
Level 1	• possesses basic knowledge of the function of certain objects and occurrences with the possibility to apply them in practice and other disciplines, while at the same time enabling further studying	• possesses basic skills for performing simple operations • uses simple methods, tools and instruments with instructions and under supervision • possesses general rules of communication	• performs simple tasks under direct supervision • takes responsibility for performing working tasks
Level 2	• possesses basic theoretical and professional knowledge, necessary for the requirements of the work, which can be applied when performing simple working tasks, while at the same time enabling further studying	• possesses practical and creative skills for solving simple or less complex and predefined work in known conditions and predictable situations • uses simple methods, tools, instruments, devices and materials based on detailed instructions • communicates and cooperates with specific persons	• works independently under known conditions and under intermittent supervision and with limited responsibility for performing working tasks • establishes simple communication and cooperation with some employees in known situations
Level 3	• possesses theoretical and systematic adopted professional knowledge, facts, principles, processes and general concepts for a certain area of work or study, while at the same time enabling further studying	• possesses practical and creative skills that enable the solving of known (predictable) and less known (unpredictable) situations • performs work and tasks of medium complexity, less standardised and relatively visible. • uses various devices, tools, equipment and materials in the process of production and in services • communicates and cooperates with the group	• plans, prepares, organises and values own work, based on predetermined instructions, within the scope of their work • performs work that is not always defined in advance, with a certain degree of independence and responsibility

	Knowledge and understanding	Skills	Competence
Level 4	• knows the concepts, principles and processes from the study subjects and areas • possesses systematic theoretical and professional knowledge within the specified area of work or study that includes analysing and connecting facts and theoretical principles when performing the work, while at the same time enabling further studying	• possesses various cognitive, practical and creative skills, based on theoretical knowledge and principles, necessary for studying, working and solving problems in changeable conditions in a certain field of work or study • trained to collect, analyse, select and use relevant information from various sources, tools, methodologies, techniques and materials in the area of study • trained to perform complex procedures and use methods, instruments, tools, installations and materials in the operation • communicates and cooperates with the group in changeable conditions	• independently plans, organises and runs own work and conducts supervision of the mutual work • independently performs complex tasks and solves problems, adjusting behaviour in accordance with given instructions, in changeable conditions • responsible for own work and the work of the group, for the purpose of evaluating the results of the work and improving the quality, in accordance with predefined standards and criteria
Level 5	• displays knowledge and understanding in the field of study or work that is built upon general secondary school education supported with professional literature • possesses specialist theoretical and professional knowledge and understanding of individual basic theories from the narrow scientific and expertise area • possesses limited knowledge of contemporary developments in the area of work or study, which provides support to the field of work or profession, potential for personal development and basis for further studies to complete the first cycle	• applies skills that are based on understanding of theoretical principles and their application in solving problems and in the execution of complex and specific tasks in the field of work and study, with the selection and use of relevant data, methods, procedures, techniques, instruments, devices, tools and materials • possesses the skills to study in order to become able to take over further research with a certain degree of independence • possesses the ability to communicate and discuss with target groups from the narrow profession or area of study, with colleagues, superiors and clients	• has a high degree of personal and business responsibility, and ability to evaluate own work and the work of the group based on criteria in the field of work • capability of transferring knowledge to others, organising, communicating and controlling own work and the work of others • takes responsibility for own results, but also shares responsibility for the activities, results and work of others in the group

	Knowledge and understanding	Skills	Competence
Level 6	• displays knowledge and understanding in the scientific field of study that is built upon previous education and training, including the domain of theoretical, practical, conceptual, comparative and critical perspectives in the scientific field according to the relevant methodology • displays understanding of a certain area and knowledge of current issues in relation to scientific research and new sources of knowledge • displays knowledge and understanding of different theories and methodologies necessary for the wider area of research	• is able to apply knowledge and understanding in a manner that reflects a professional approach to the work or profession • displays the ability to identify, analyse and solve problems • capability to find and support arguments within the profession or the field of study • capability to collect, analyse, evaluate and present information, ideas and concepts from the relevant data • capability to assess theoretical and practical issues, provide explanations for the reasons and select an appropriate solution • takes initiative to identify the requirements for acquiring further knowledge and study with a high degree of independence • capability to communicate and discuss information, ideas, problems and solutions, when the decision criteria and the scope of the task have been clearly defined, both with experts and the non-expert public	• takes responsibility for own results and shared responsibility for collective results • capability for independent participation, with a professional approach, in specific scientific and interdisciplinary discussions • makes the relevant judgement by taking into consideration the personal, social, scientific and ethical aspects

	Knowledge and understanding	Skills	Competence
Level 7	• displays knowledge and understanding of the scientific field of study (or learning) that is built upon the first cycle, by applying methodologies appropriate for resolving complex problems, both in a systematic and creative manner, which provides the basis or the possibility for originality in the development and/or application of autonomous ideas in the context of the research • displays a high level of professional competence in one or more specific scientific fields • possesses knowledge from one or more subject areas which, in the given scientific fields, are based on most renowned scientific research in that scientific field, as well as the capability to connect wider and deeper knowledge in related professions or fields of science	• capable of critical, independent and creative problem solving with certain originality in new or unknown environments and in multidisciplinary contexts, connected with the field of study • capability to synthesise and integrate the knowledge and to handle complex issues, in a systematic and creative manner • capability to evaluate and select scientific theories, methodologies, tools and general skills from the subject areas, and to put forward new analyses and solutions on a scientific basis • capability to recognise the personal need for further knowledge and capability for independent and autonomous actions when acquiring new knowledge and skills in general terms • capability to exchange conclusions and proposals by arguing and rationally substantiating thereof, both with experts and non-experts clearly and unambiguously	• displays significant responsibility for own and shared results, for leading and initiating activities • capability for solid evaluation even of incomplete and limited information, which includes personal, social and ethical responsibilities in the application of the acquired knowledge and evaluation thereof • capable of taking responsibility for further professional development and education, both for themselves and for the group with which they cooperate
Level 8	• demonstrates a systematic understanding of the field of research and perfect knowledge of research methods and skills within this field in accordance with the highest international standards • possesses knowledge gained with their own research or work, thus significantly contributing to the professional and scientific field of research, but also in the related fields	• displays the ability to interpret, design, apply and adapt the essential subject of the research with scientific integrity • uses their knowledge as a basis for original ideas and research that exceed the current boundaries of knowledge, developing new knowledge, valued on the level of national and international peer-reviewed publications • ability for critical analysis, evaluation and synthesis of new and complex ideas, necessary for solving complex problems in the field of research • ability for independent initiation and participation in national and international research networks and events with scientific integrity • ability for independent initiation of research and development projects, through which new knowledge will be generated as well as skills for	• takes maximum responsibility for the outcomes of own work, but also for the work of the others in the group • takes responsibility for managing complex processes, while simultaneously ensuring the professional development of the individual and the group as a whole

	Knowledge and understanding	Skills	Competence
		development in the field of research • expected to be capable of promoting themselves in academic and professional frameworks and in technological, social or cultural development in a knowledge-based society • capable of communicating with colleagues, wider academic community and with society as a whole within their field of expertise	

Source: Government of the former Yugoslav Republic of Macedonia, 2013.

A2.2.4. Iceland

NQF levels in Iceland are described in an integrated way, including knowledge, skills and competence, and their interrelation.

Descriptors for levels 1 to 7 of the Icelandic qualifications framework

	The person…
Level 1	• has the basic knowledge for work and/or as a preparation for further studies • has the basic skills required to carry out simple tasks during studies and/or at work • can work under guidance with some independence on well-defined tasks
Level 2	• has basic knowledge of work procedures and concepts useful in work and/or study • can solve problems by applying the appropriate work methods, tools and information • can work as a part of a team, initiate interaction and be responsible for well-defined tasks
Level 3	• has specialised knowledge in a specific field of work and/or as a preparation for further studies • can demonstrate professionalism, show initiative, organise tasks and evaluate own work • can make use of specialised knowledge for improvements, give professional advice and cooperate in cross-disciplinary activities
Level 4	• has specialised knowledge useful for supervision and management in a specific field of work and/or further studies • can organise work procedures, apply the appropriate techniques and develop working methods in a responsible way • can give guidance and professional training, review own and others' performance and be responsible for the utilisation of the relevant occupation in cross-disciplinary cooperation
Level 5.1	• has knowledge of selected theories and theoretical concepts and has insights into the relevant field in a broader context • can develop and manage projects using the techniques relevant to the field/profession • can show initiative and work independently in addition to solving problems as part of a team
Level 5.2	• has an understanding of and insight into major theoretical concepts and theories and is familiar with the latest knowledge within a specific field • can apply critical theoretical and/or professional analysis when solving problems and evaluate the results independently • can work independently in an organised manner, make and carry out plans and supervise teamwork
Level 6.1	• has knowledge and understanding of theoretical challenges and arguments and is able to contextualise the latest knowledge • can apply the methods of the relevant field/profession to formulate, develop and solve problems • can initiate and lead new projects and be responsible for their own work and that of a team
Level 6.2	• has obtained knowledge through research and has a good understanding of theoretical challenges and arguments and is able to contextualise the latest knowledge • can understand complex problems and use appropriate methods to conduct smaller research projects • can initiate and lead new projects, evaluate the most suitable approaches, and be responsible for their own work and that of a team
Level 7	• has advanced knowledge of theories, research and the latest developments in a scientific field • can conduct and manage research with confidence in order to develop new knowledge • can work independently, show initiative and be responsible for complex theoretical tasks and pass on knowledge to others

Source: Icelandic Ministry of Education, Science and Culture, 2015.

A2.2.5. Kosovo

Main NQF level descriptor elements in Kosovo

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• practical • theoretical	• practical • cognitive	• autonomy • responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence
Level 1	• has basic knowledge to learn, understand and perform tasks, simple works, and to participate in everyday life • has general knowledge that may not be specific for a teaching subject, for an occupation or occupational area • is aware and understands basic tasks and instructions to perform them	• performs simple tasks using basic skills • performs routine tasks that require communication, reading, writing skills and basic maths operations • operates within a supervised structure or team work	• undertakes work or structured learning which is organised in known circumstances and is controlled by other people • performs tasks under direct supervision and does not take full responsibility to decide what has to be done, how, when or where it is to be done, or the quality of the outcomes of the task
Level 2	• good knowledge of an educational or occupational area • factual knowledge and information on the general context, processes, tools and materials of an educational or occupational area • understands procedures and facts for performing basic tasks • is aware and interprets types of information and ideas	• combines basic practical skills and thinking skills, using the kind of information listed under knowledge at this level • demonstrates the range of skills related to the calculation and planning to carry out tasks and solve problems which are usual for the educational or occupational area • follows routine practices based on clear rules, using simple tools and materials	• performs tasks under supervision, mainly monitored by others, but the individual will take responsibility for some aspects of the tasks on what to do, how and when or where it is to be done, as well as the quality of some outcomes • expresses proactive readiness in exchanging mutual experiences
Level 3	• understands main aspects of educational or occupational area and is able to use this knowledge to achieve outcomes in structured learning or work • understands and assesses facts, principles, ideas and general processes needed to undertake the structured learning or work successfully in the educational or occupational area	• applies a number or practical and cognitive skills necessary to perform tasks and solve problems in an educational or occupational area • solves problems by applying most appropriate methods, tools, materials and necessary information	• responsible for performing tasks, solving problems and achieving outcomes appropriate for this level, without direct supervision • adapts behaviours to circumstances to solve problems in proactive participation in structured learning or work premises • solves structural problems in this educational, occupational area and may make changes to the approach to the task when this is required

	Knowledge	Skills	Competence
			• supervises the structured learning or work carried out by other people: these are routine tasks set by teachers, trainers or managers in order to develop the autonomous responsibility for their behaviour in relation to the learning and work
Level 4	• understands broad technical knowledge and analyses information related to the relevant field of study or work • understands facts and determines basic principles in a broad context within the relevant field of study or work • selects, analyses and carries out actions and procedures within a certain field of study or work	• applies a number of practical and thinking skills to perform tasks and solve problems for the educational or occupational field • performs tasks at the level of qualified worker or structured learning at the level required for entry to higher education study • demonstrates a series of practical skills to perform more complex tasks	• undertakes work or structured learning within the boundaries and normal practices of an educational or occupational area • makes changes in planned approach while carrying out activities • works independently and takes full responsibility to plan and complete work or structured learning, as well as for the quality of outcomes • supervises others charged with routine activities, evaluates their performance and takes steps to create improvements on the basis of this evaluation
Level 5	Has broad and specialised factual knowledge in and about an educational subject, occupation or occupational area; is able to use knowledge to achieve outcomes which result from structured learning or work. This includes: • using knowledge in a field of study achieved in upper secondary education and supported by texts and materials at this level, continuing in further studies • using broad and specialised factual and theoretical knowledge within a field of work or study • defining features and main areas of subject, occupational area, and detailed knowledge in several fields • understanding of some major current issues, specialisations, research or processes within the context of work or study	Able to use a cluster of specialised skills necessary for planning, implementing, reviewing and assessing results in an educational area, occupation or occupational area; able to apply comprehensive practical and cognitive skills, techniques to find a creative solution for practical problems and fulfilment of tasks. This includes: • research, analysis and interpretation for applying relevant theories, principles and methods for field of work or study • applying research and analytical skills for solving problems of concrete and abstract issues • using a level of skills related to a field of work or study, a part of which is advanced or specialised • interpretation of ideas to parties, supervisors and clients in a well-structured and coherent form, using qualitative and quantitative forms • identification of lack of personal progress in the field of study and assessing personal and	Able to undertake independent work or structured learning of all types listed for this level, including the adaption of changes and requirements to unforeseen circumstances or developments. This includes: • exercising significant personal autonomy and taking initiative in some activities which require the exercise of discretion and judgement • management and supervision in contexts of work or study which may include organising or taking responsibility for the work of others and for using resources and managing activities of others • reviewing and evaluating personal and others' performance, for whom responsibility is taken, and planning improvements in performance necessary for performance

	Knowledge	Skills	Competence
		others' work	
Level 6	Has very advanced knowledge in and about the field of study, including critical understanding of theories and principles. This includes: • understands theories created on advanced general education and includes aspects which precede knowledge of a certain field of study • uses detailed theoretical and practical concepts which belong to a basic field of study, and include critical thinking, theories and principles • understands methods and means of a specialised field of study and work as well as innovative approaches related to these methods • identifies relevant social and ethical issues which arise in a field of study or work	Able to demonstrate skills to solve complex and unpredictable problems in a specialised field of work or study. This includes: • using a few practices, materials which are specialised and advanced or at the forefront of a subject, discipline or field of work • executing defined projects of research, development and identification of relevant outcomes • communication of ideas, problems and solutions to a professional and non-professional audience, using a series of techniques that include qualitative and quantitative information • collects and interprets relevant data (usually of a certain field of study) and transmits assessments that are reflections on relevant social, scientific and ethical issues • formulates and protects arguments for problem solution • continuously identifies and evaluates his/her education needs	• performs tasks or studies to manage complex technical and professional activities and projects, which may include the responsibility for decision-making in unpredictable work or study contexts or to manage professional development of individuals or groups • expresses creativity and initiative in developing projects for managerial processes; manages and aids people to develop team performance • performs tasks in a professional manner and in compliance with the code of ethics • evaluates the skills necessary for further studies with a high level of independence
Level 7	Has high, specialised and specific knowledge which is essential in a field of work or study and may be related to different fields; this is used as a basis for original thinking and/or research. This will include: • a critical understanding of the principle theories, principles and concepts relating to practical and conceptual knowledge in the subject, discipline or field of work including relevant specialisations • using specialised or multidisciplinary theoretical and practical concepts, where some of them are essential to a field of study. this knowledge creates the basis for development and application of original ideas • identification of features, limits and terminology in the main fields of subject, discipline or work	• uses specialised skills and techniques that relate to a subject/discipline or occupational area for carrying out activities requiring significant innovative thinking and authentic research • demonstrates specialised and multidisciplinary knowledge which includes reflection on social and ethical responsibilities related to the application of knowledge and judgements • clearly communicates with social and ethical responsibility with a wide audience and reaches conclusions that may be the result of research, self-study or experience at work • assesses new information, concepts and evidence from a wide range of sources and uses specialised skills to solve problems and integrate knowledge from the multidisciplinary	• managing teams of professionals, contributing to the development of their professional knowledge and practice and reviewing their performance • dealing with complex ethical and professional issues and making decisions on issues that are not addressed by current professional rules or practices • possession of the independence and learning skills that allow for continuity to study in a manner that may be of self-orientation and independent high level

	Knowledge	Skills	Competence
	• creation of critical thinking on current issues of a subject, discipline or field of work, including relevant specialisations and interaction between different fields	field • plans, develops and implements research projects • develops authentic and creative responses for problems and issues practised and often unpredictable in professional contexts	
Level 8	• use most advanced concepts of a field of work, study, research and relationship between different multidisciplinary fields • use theories for issuing conclusions from a critical assessment of a subject/discipline, including critical understanding of main theories, principles and concepts • understand processes of individual research or development work by giving an important contribution in developing the improvements of field, occupation or occupational area • provide authentic and creative opinions in new, complex and abstract ideas, which include work with new complex concepts by judging in the absence of complete or sustainable data, as well as expanding knowledge and professional practices within a certain field or interrelated areas	• applies standard and specialised instruments and techniques of research and inquiry methods (e.g. synthesis and evaluation) to plan, develop and implement research and development projects for the purpose of solving critical problems; extend knowledge about problems and new issues, as well as redefining existing knowledge and professional practice • uses literature, experimental approach or other systematic approaches for a range of required knowledge • describes critical reviews in one or more specialisations or research areas • communicates the expertise to a wide audience using different methods and national and international publications	• demonstrates a high level of autonomy and initiative in occupational or equivalent activities, demonstrating authority, innovation, autonomy and educational and educational and occupational integrity • commit to developing new ideas and processes that are at the highest level of work contexts, or study, including research in the relevant field or discipline • full responsibility for the personal work and main responsibility for the work of others, demonstrating leadership and authenticity in solving problems • demonstrate responsibility for complex ethical, social and professional issues • fairly judge new issues not addressed by current professional and ethical rules or practices

Source: National Qualification Authority of Kosovo, 2016.

A2.2.6. Liechtenstein

The national qualifications framework for Liechtenstein (NQFL) has two strands. The strand for vocational education and training was adopted from the Swiss NQF for vocational and professional qualifications (NQF-VPQ). It covers levels 1 to 8 for ease of reference to the EQF; however, there are currently no higher VET qualifications in Liechtenstein. These levels descriptors are presented below. The strand for higher education uses the Dublin level descriptors.

Main level descriptor elements of the VET strand of NQFL in Liechtenstein

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• knowledge • understanding	• procedural • sensorimotor	• professional • personal • autonomy • social competences • leadership competences

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence
Level 1	Knowledge: • possess basic knowledge specific to the working or learning context and a basic general education Understanding: • understand basic, general correlations within the working or learning context and able to explain these in one's own words	**Procedural skills:** • able to recognise basic standardised tasks in a specific field to a certain extent **Sensorimotor skills:** • able to use specific technical aids and instruments to solve basic standardised tasks in a specific field based on specific operational guidelines	**Professional competences:** • possess initial practical experience within a business or similar setting from which further knowledge and skills may be developed • work can be carried out according to instructions **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills under instruction or operational guidelines in clearly defined assigned tasks within a business or similar setting and adhering to mandatory guidelines • **social competences:** able to adapt one's own behaviour to the situation at hand and interact appropriately with others, work within a team and convey information both verbally and in writing
Level 2	**Knowledge:** • possess basic knowledge	**Procedural skills:** • able to recognise and handle	**Professional competences:** • drawing from initial work experience, able to use the requisite knowledge

	Knowledge	Skills	Competence
	specific to the working or learning context and a basic general education **Understanding:** • understand the general correlations within the specific working or learning context or branch and able to explain these in one's own words	standardised tasks in a specific field to a certain extent based on operational guidelines **Sensorimotor skills:** • able to use specific technical aids and instruments to solve standardised tasks in very familiar situations in a specific field based on operational guidelines	and skills at this level to carry out organised and planned work within a business • work can be carried out according to instructions **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills to assigned tasks in a specific field partly on one's own; able to assist in the planning of simple tasks within a specific field and carry out these tasks in accordance with mandatory guidelines • **social competences:** able to adapt one's behaviour to the situation at hand and interact appropriately with others, work within a team and convey simple information from the specific field both verbally and in writing in a suitable form
Level 3	**Knowledge:** • possess knowledge specific to the working or learning context and general education **Understanding:** • understand the correlations within the specific working or learning context or branch and able to explain these in one's own words	**Procedural skills:** • able to recognise tasks in a specific field • able to carry out tasks based on operational guidelines and known problem-solving strategies **Sensorimotor skills:** • able to use specific technical aids and instruments to solve standardised tasks in familiar situations in a specific field based on operational guidelines	**Professional competences:** • drawing from work experience, able to use the requisite knowledge and skills at this level to ensure the successful application of working techniques and basic working processes within a business • work can partly be carried out on one's own **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills in a specific field partly on one's own; within the specific field, able to share responsibility for simple tasks and adhere to mandatory guidelines • **social competences:** able to adapt one's behaviour to the situation at hand and the needs of others, work within a team and convey information from the specific field both verbally and in writing in a suitable form
Level 4	**Knowledge:** • possess more in-depth knowledge specific to the working or learning context and general education • able to acquire, on one's own, specific technical knowledge **Understanding:** • understand the correlations within the specific working or learning context or branch as well as from thematically related fields and able to explain these in one's own	**Procedural skills:** • able to recognise tasks in a specific field • able to carry out tasks based on operational guidelines or through the use of known problem-solving strategies **Sensorimotor skills:** • able to use specific technical aids and instruments to solve particularly difficult tasks in familiar situations in a specific field based on operational guidelines or with the help of known methods or tools • able to use basic means of	**Professional competences:** • drawing from work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's own working processes within a business • work can be performed on one's own • able to supervise routine tasks of other persons **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills in a specific field mostly on one's own; within the specific field, able to take responsibility for clearly defined tasks and handle changing requirements • **social competences:** able to adapt one's behaviour to the situation at hand and the needs of others, work within a team and convey information from the specific field both verbally and in writing in a suitable form • **leadership competences**: able to show other workers how to perform a

	Knowledge	Skills	Competence
	words	communication	specific set of tasks within a given working context
Level 5	**Knowledge:** • possess extensive knowledge of important areas of work and a more in-depth general education • able to acquire, on one's own, specific technical knowledge **Understanding:** • understand the correlations within or outside the specific working context or branch and able to explain these in one's own words	**Procedural skills:** • able to recognise and analyse tasks in a specific field • able to carry out tasks based on operational guidelines or through the use of known problem-solving strategies **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve fairly difficult tasks in various situations in a specific field based on operational guidelines or with the help of known methods or tools • able to use basic means of communication properly and present information from the specific field	**Professional competences:** • drawing from work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's own working processes within a business • work can be performed in the form of independent and strategic activities • able to supervise and guide routine tasks of other persons **Personal competences:** • **autonomy**: able to apply the requisite knowledge and skills in a specific field on one's own. Within the specific field, able to take responsibility for tasks and handle changing requirements • **social competences**: able to reflect on one's own role and adapt one's behaviour to the situation at hand and the needs of others, work within a team and convey information from the specific field both verbally and in writing in a precise and suitable form • **leadership competences:** able to manage workers in several specific fields of activity within a given working context
Level 6	**Knowledge:** • possess advanced knowledge in all important areas of work and more in-depth general education • able to acquire, on one's own, specific technical and interdisciplinary knowledge **Understanding:** • understand the correlations within or outside the specific working context or branch and able to see linkages with thematically related fields	**Procedural skills:** • able to recognise, analyse and assess complex tasks in a specific field • able to carry out tasks based on operational guidelines or through the use of known problem-solving strategies **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve difficult tasks in various situations in specific fields based on suitable and known methods or tools • able to use basic means of communication properly and present information from the specific field	**Professional competences:** • drawing from versatile work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's own working processes and produce strategic results within a business • work can be performed in the form of independent and strategic activities as well as in the form of consulting • able to handle complex technical activities and projects and take important decisions **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills in a specific field and thematically related fields on one's own. Within the entire specific field, able to take responsibility for tasks and processes and handle changing requirements • **social competences:** able to reflect on one's own role and the role of others and conscientiously maintain these roles in dealings with others, work within a team and convey information from the specific field both verbally and in writing in a precise, understandable and suitable form • **leadership competences:** able to manage workers in several fields of activity within a given working context, partly assume responsibility for

	Knowledge	Skills	Competence
			these workers and support them
Level 7	**Knowledge:** • possess advanced, solid and detailed knowledge of all important areas of work and extensive general education • able to acquire, on one's own, specific technical and interdisciplinary knowledge **Understanding:** • understand the complex correlations within or outside the specific working context or the branch and able to see interdisciplinary linkages with thematically related or unrelated fields	**Procedural skills:** • able to recognise, analyse and assess complex tasks in a given interdisciplinary field • able to carry out tasks based on operational guidelines or through the use of suitable, innovative problem-solving strategies **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve very difficult and challenging tasks in every situation from thematically related fields based on suitable and at times entirely novel methods or tools • able to make full use of the possibilities of various means of communication and present complex information from the specific field	**Professional competences:** • drawing from versatile work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's own working processes and produce strategic results within a business • work can be performed in the form of managerial and consulting activities as part of a complex working process and contribute to the further development of the business or improvement of working processes • able to plan and adopt new strategic approaches to complex, unforeseen activities and projects **Personal competences:** **autonomy:** able to apply the requisite knowledge and skills in a challenging field and thematically related fields independently and conscientiously; able to take responsibility for increasingly complex tasks and processes and handle changing requirements • **social competences:** able to reflect on one's own role and the role of others, define these roles and conscientiously maintain them in dealings with others; able to work within a team and to convey complex information from the specific field both verbally and in writing in a precise, understandable and suitable form, having the desired impact on and being tailored to the intended recipients • **leadership competences:** able to manage workers in a field of activity within a given working context, completely assume responsibility for these workers and support them in a targeted fashion
Level 8	**Knowledge:** • possess advanced, solid, specialised, detailed and systematic knowledge in all areas of work and extensive general education • able to acquire, on one's own, specific technical and interdisciplinary knowledge **Understanding:** • understand the complex correlations within or outside the specific working context or branch and able to see interdisciplinary linkages with complex thematically related	**Procedural skills:** • able to fully recognise, analyse and assess complex and highly challenging tasks in a given interdisciplinary specific field • able to carry out tasks based on operational guidelines or through suitable, innovative problem-solving strategies and make relevant prognoses or recommendations **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve novel, very difficult and highly challenging	**Professional competences:** • Drawing from extensive work experience, able to use the requisite knowledge and skills at this level in a targeted fashion to ensure smooth operation of one's own working processes and produce strategic results within a business • work can be performed in the form of managerial and consulting activities as part of one or more complex working processes and contribute to the further development of the business or improvement of working processes **Personal competences:** • **autonomy:** able fully and conscientiously to apply the requisite knowledge and skills in a specific highly challenging field and thematically related fields on one's own; able to take responsibility for complex tasks and processes and handle changing requirements within the entire highly challenging field • **social competences:** able to reflect on and shape one's own role and

	Knowledge	Skills	Competence
	or unrelated fields	tasks in every situation from thematically related fields based on suitable and entirely novel or innovative methods or tools • able to make full use of the possibilities of various means of communication and present complex and differentiated information from the specific field	the role of others, behave responsibly in dealings with others, work in a team and strategically apply one's analytical skills within the working context; able to convey complex and differentiated information from the specific field both verbally and in writing in a precise, understandable, suitable and professional form, having the desired impact on and being tailored to the intended recipients • **leadership competences:** able to manage workers in a highly challenging field of activity within a given working context, completely assume responsibility for these workers and support them in a targeted fashion to take personal initiative

Source: Liechtenstein Government, 2016.

A2.2.7. Montenegro

Main NQF level descriptor elements in Montenegro

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• factual • theoretical	• cognitive • practical	• autonomy • responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence
Level I_1	• basic knowledge of simple facts and notions within the field of work or discipline	• basic linguistic and mathematical literacy • development of practical skills when performing a smaller number of familiar repetitive tasks, using basic tools and materials	• work in entirely predictable and familiar repetitive situations • very low independence in performing tasks and activities • performance of tasks and activities is under direct supervision • no responsibility for the work of others
Level I_2	• basic general knowledge, knowledge of basic facts and notions within a discipline or field of work or a discipline allowing further systematic learning	• basic linguistic, mathematical and computer literacy • basic knowledge of natural and social sciences and basics of civic competence • performance of basic tasks planned beforehand, in familiar, seldom changing circumstances, using basic methods, tools and materials, under clear guidelines	• performance of activities and tasks in predictable and familiar situations • limited independence in performance of simple, familiar tasks and activities under direct supervision • performance evaluation is done according to simple criteria • no responsibility for the work of others
Level II	• basic general and functional professional knowledge that can be applied in practice within a field of work or discipline	• basic functional linguistic, mathematical, computer literacy, use of basic knowledge of natural and social sciences and basics of civic literacy • performance of less demanding, previously defined tasks and activities in familiar conditions • handling machines with simple procedures and with simple tools and devices, according to detailed instructions	• performance of activities under periodic supervision, ability to cope with simple problems in situations related to a certain field or discipline • evaluation of one's own performance is done according to the basic criteria in one's own field of work, with limited responsibility for quality
Level III	• basic general and professional knowledge, along with knowledge of facts, principles and	• cognitive and practical skills that allow handling familiar and less familiar situations • moderately demanding, less standardised and relatively clear tasks and activities, involving	• ability to perform tasks and activities that are not always defined beforehand, with a higher degree of responsibility and independence • work is conducted in line with general instructions

	Knowledge	Skills	Competence
	processes in the field of work or discipline	different materials, tools, equipment and devices in production and services	• plan, prepare, organise and evaluate own performance and performance of individuals and a smaller group, within the authorities given in advance as well as within own scope of work
Level IV_1	• systematic and comprehensive general and professional knowledge in a discipline or a field of work, which include correlating facts and theoretical principles and enable further systematic learning	• application of different cognitive and practical skills, based on theoretical knowledge and principles, required for problem solving and performance of different tasks in a field of work or discipline	• independence in solving tasks within a discipline or a field of work, along with predicting consequences concerning the decisions made and actions taken • responsibility for one's own work and the work of a group, as well as evaluation of performance according to the set criteria
Level IV_2	• specialised professional knowledge concerning processes, tools, materials and devices within the narrow field of expertise	• understanding of theoretical principles and their practical application in problem solving • performance of various, more demanding and specific tasks in partly unpredictable situations, including the use of different tools, devices and methods	• independence in handling different and specific problems within the field of expertise • preparation and organisation of one's own work and the work of others, including responsibility for their work • ability to transfer knowledge related to one's own scope of work to others • evaluation of one's own performance and performance of a group according to general and specific criteria in the field of expertise
Level V	• comprehensive systematic professional knowledge in a specific field of work, which enables critical understanding of concepts, principles, technologies and methods of work	• performance of a large number of diverse and complex tasks in new and unfamiliar situations, using different methods, techniques and procedures	• independence in decision-making in new and unfamiliar situations within the scope of work, introduction of modifications and improvements in planning and organising processes affecting quality improvement of tasks and activities • responsibility for performance of a group, evaluation of one's own work, work of a group and for processes
Level VI	• demonstrate a wide and integrated range of theoretical and practical knowledge from the related subject or discipline allowing the understanding and application of professional knowledge in the field of study • use knowledge based on current developments and critical reflection on a certain subject or discipline	• have command of certain methods, skills, techniques/practice and materials related to a subject or a discipline, some of which are specialised or advanced • apply routine methods of enquiry and/or research • collect and interpret relevant data in their own field, using an entire range of sources • provide critical evaluation of problems and/or synthesis of ideas, concepts, information and matters • use a range of general skills, monitor and apply the development of new techniques and technologies	• demonstrate management ability, as well as innovative abilities in unfamiliar and unpredictable work contexts using a range of techniques • resolve problems that involve many factors in conditions in which there are no adequate sources of relevant information • be independent in taking initiative in some less demanding activities concerning implementation of a certain subject/discipline • take certain responsibility for the work and training of others and make continuous evaluation of their own work and responsibility towards work • demonstrate teamwork abilities under leadership of

	Knowledge	Skills	Competence
	• demonstrate critical reflection on one's own creative potential and the ability to choose and apply main theories and principles, concepts and terminology within a given field • identify arguments for resolving problems within one's own field and be able to defend them	• recognise main problems on the basis of research and by integrating knowledge from new or interdisciplinary fields, showing the ability to perform selection and apply relevant approaches and tools in order to resolve problems and complete tasks • apply knowledge in a manner reflecting professional approach to work and practice, as well as show the ability to develop ideas and arguments • possess problem-solving ability • are able to form opinions on the basis of incomplete or limited information • show awareness of their own potential and motivation for upgrading their own knowledge, skills and competence	other competent persons • demonstrate creativity in development of projects and initiatives • make judgment on the basis of social and ethical matters that occur during the course of work and studying, requesting guidelines (instructions) where necessary
Level VII$_1$	• demonstrate theoretical and practical experience, which represents a basis for originality in professional work and/or application of ideas • integrate a majority of main professional fields, terminology and conventions on the level of a discipline (or a set of related subject fields, as is the case in medicine) • develop highly specialised theoretical and practical knowledge within a certain subject/discipline in a range of related subject fields based on relevant scientific discoveries • demonstrate knowledge of current matters and trends in one or more subjects/disciplines and related subject fields and demonstrate awareness and understanding of main	• use a range of main skills, techniques, practices and/or materials related to a field/discipline (or a set of related subject fields such as those in medicine) • monitor and apply new techniques and technologies • apply certain skills, practices and/or materials that are more specialised or advanced • apply a range of standards and specialised research tools and inquiry techniques and show the ability to participate in scientific research • diagnose, define and analyse complex problems in their own field, drawing conclusions and giving recommendation by using and integrating all knowledge from their own, as well as other related fields • develop original and creative answers to certain problems and questions • demonstrate the ability to make critical evaluation of their own performance and motivation for continuous upgrade of their own knowledge, skills and competence • are capable of scientific research teamwork, as well as of distinctive individual contribution to work	• demonstrate the ability to work efficiently on a specific and/or multidisciplinary subject as team members, contributing to a new manner of thinking and problem solving • work professionally under leadership, in cooperation with colleagues and qualified persons from the field of practice • take responsibility for their own work and/or responsibility for the work of others • critically review their own and other people's roles and responsibilities, show the ability to work and handle a situation in various unfamiliar and complex work conditions and exploration fields and resolve problems within those contexts • be independent and take initiative in tasks or activities related to work and/or research • participate in professional discussions, formulate and present arguments and solutions for main problems from the academic field and profession • deal with complex ethical and professional matters in line with existing regulations and professional orientation

	Knowledge	Skills	Competence
	theories, principles, concepts and ability to apply them • critically consider, consolidate and expand knowledge, skills and practice in their own subject/discipline • attained knowledge forms the basis for development and application of original ideas and solutions, as well as good basis for further specialisation and continuation of education, with a view to progression towards higher qualification levels		
Level VII$_2$	• demonstrate highly specialised theoretical and practical knowledge which integrates most of the major fields of a subject/discipline, knowledge of terminology and conventions; • use theoretical and practical knowledge related to the latest scientific achievements • demonstrate critical understanding of main theories, principles, concepts and matters related to a subject/discipline in their own field and intersections of different fields • demonstrate originality and creativity in application of one's own knowledge; have good basis for engaging in scientific research and making further progress in science with the aim of obtaining a Phd degree	• use a wide range of skills, techniques, practices and/or materials related to a subject/discipline, including a range of specialised ones which represent the latest achievements • use information from the latest scientific discoveries • use a range of advanced and specialised general skills • be able to apply a range of standards and specialised research or equivalent tools and techniques in research • identify problem(s) on the basis of research by applying latest discoveries or practices from own field or from interdisciplinary fields • address complex issues and make conscious decisions in situations lacking complete or consistent data/information • demonstrate originality and creativity in application of knowledge, skills, practices while working on a subject • communicate with own colleagues, colleagues of higher rank and specialists • demonstrate motivation for continuous improvement of personal scientific knowledge • be capable of explaining results and methods of projects to both professional audience and	• have significant autonomy and initiative in conducting activities • demonstrate the ability to manage and introduce novelties in complex and unfamiliar working and teaching contexts • have the ability to solve problems in the absence of relevant information • take responsibility for own work as well as a significant part of responsibility for others • carry out evaluation of team performance, showing skills required for project management • possess innovation ability and ability of reasoned problem solving • demonstrate leadership skills and/or take initiative • be able to work in complex ethical and social circumstances and make decisions related to matters for which there are currently no regulations or guidelines

	Knowledge	Skills	Competence
		laypersons, by using appropriate techniques	
Level VIII	• demonstrate a wide range of knowledge from a certain field of research • use professional knowledge for critical analysis, evaluation and relation of complex ideas that are entirely new in a certain field • enrich or redefine existing knowledge and/or professional practice in one and/or several overlapping fields • form or manage a scientific and research team, independently connect, interpret and present results of scientific research	• select and use appropriate methodologies • demonstrate advanced skills in collecting, managing, obtaining and analysing data in complex environments • apply highly developed informational, scientific and educational, and technological skills, as well as project management skills and expertise in scientific research • be able to interpret data and defend arguments • possess skills for high level communication with the scientific community • demonstrate expertise in dissemination and publishing of scientific results and works • possess the ability of scientific networking with colleagues within research fields • have the ability of excellent communication in one of the most common foreign languages in the international research community • lead, research, develop and manage a project • diagnose a problem and reach a solution on the basis of incomplete and limited information	• identify the field of research • demonstrate the ability to conduct research independently • solve problems by integrating complex and, at times, incomplete sources of knowledge in new and unfamiliar contexts • choose, plan and initiate research work in a manageable way • respect ethical principles in research • contribute to originality of research within a given field • be able to upgrade knowledge or apply knowledge in the new context (previously not explored) or improve methodology • react to social, ethical problems that occur during work and study • demonstrate quality in management and abilities for innovation in unfamiliar, complex or unpredictable work or teaching contexts • demonstrate commitment, determination and persistence in work

Source: Montenegrin Ministry of Education, 2014.

A2.2.8. Norway

Main NQF level descriptor elements defining levels 2 to 8 in Norway

Level descriptor elements		
Knowledge	**Skills**	**General competence**
Understanding of theories, facts, concepts, principles and procedures in a discipline, subject area and/or profession.	The ability to apply knowledge to complete tasks and solve problems. There are different types of skills: cognitive, practical, creative and communicative.	The ability to use knowledge and skills in an independent manner in different situations in study and work contexts, by demonstrating the ability to cooperate, the ability to act responsibly, and a capacity for reflection and critical thinking.

Descriptors for level 2 to 8

Level 1: Open: no qualifications included at this level; the level is not part of the NQF		
Knowledge	**Skills**	**General competence**
No learning outcome descriptors	No learning outcome descriptors	No learning outcome descriptors
Level 2: Competence from primary/lower secondary school		
Knowledge	**Skills**	**General competence**
The candidate… • has a basic knowledge of important facts and concepts in and across subjects • has knowledge of fundamental political, social, cultural and environmental conditions • has a basic knowledge about the use of sources, about how information can be obtained, documented, assessed and applied • has a basic understanding of learning how to learn • is familiar with different educational choices and occupations	The candidate… • can express him/herself verbally and in writing, read, is numerate and can use digital tools in the school work context • can present topics in Norwegian/Sami and at least one foreign language • can use experience, creativity and exploratory work methods to acquire new knowledge • can use practical-aesthetical work methods in several subject areas • can reflect on his/her own participation in different media	The candidate… • can make use of his/her knowledge and experience to participate in a democratic and inclusive society • can cooperate with others in both the work/school and social context • can discuss and assess others and his/her own school work under supervision • can make independent choices, state the reasons for them and act on the basis of them

Level 3: Basic competence (partially completed upper secondary education)

Knowledge	Skills	General competence
The candidate… • has knowledge of important facts and concepts in his/her own subject/subject area • has knowledge of work methods, procedures and tools in one or more limited subjects/subject areas • is aware of relevant regulations and quality requirements • has an understanding of his/her own educational and work opportunities	The candidate… • can communicate and express him/herself in his/her own subject/subject area • can use relevant technology to solve subject-specific tasks • can receive and follow instructions and carry out specific tasks within the subject area • can be creative when carrying out tasks • can search for and use information from different sources to further his/her development in relation to future work and/or education	The candidate… • can cooperate with others in the performance of work and utilise relevant skills and knowledge • can initiate and carry out limited tasks • can seek and accept guidance in relation to concrete tasks and own vocational development

Level 4 A: Completed upper secondary vocational education: subject-related skills and vocational competence

Knowledge	Skills	General competence
The candidate… • has knowledge of relevant concepts, models and principles in the subject area • has knowledge of, and has an overview of, materials, equipment and work methods, and can give reasons for his/her choices • has the experience-based knowledge required to practise in the vocational field • has insight into the importance and historical development of the trade/occupation in a societal perspective • has knowledge of relevant regulations, standards, agreements and quality requirements • has knowledge of different learning strategies and can utilise them in his/her own learning has an understanding of his/her own educational and work opportunities	The candidate… • can systematise, present and report on planned and completed work • can carry out calculations and assess consequences • can solve vocational challenges in a critical and creative manner, alone or in cooperation with others • can use relevant concepts, principles, materials and equipment in his/her work • can communicate in at least one foreign language • can assess and choose work methods for solving subject-specific tasks • can be creative when planning and performing work • can carry out work in accordance with the applicable regulations, standards, agreements and quality requirements can analyse and assess different types of sources of relevance to his/her own work	The candidate… • can use his/her own vocational competence in new and complex contexts • can work independently and take responsibility for ensuring that work is carried out with the required craftsmanship and in accordance with legislation, regulations and established ethical standards in the trade/field in question • can cooperate and communicate with colleagues, customers and/or users when carrying out his/her work • can guide others in their work • can document and assess others' work and own work in connection with planning, organising, work performance and results • can reflect on his/her own vocational competence as the basis for future choices can initiate tasks and activities that promote his/her own learning and development

Level 4 B: Completed upper secondary school higher education entrance requirements

Knowledge	Skills	General competence
The candidate… • has knowledge of important facts, concepts, theories, principles and methods in different subjects • has the experience-based knowledge required to practise different subjects • has insight into how academic issues relate to society as a whole • has knowledge of different learning strategies and can apply them in his/her own learning • has an understanding of his/her own educational and work opportunities	The candidate… • can express him/herself verbally and in writing in different academic contexts • can read, is numerate and can use digital tools and media to solve academic challenges in a critical and creative manner, alone or in cooperation with others • can use academic terminology in communication and cooperation • can communicate in at least two foreign languages • can apply relevant methods, principles and strategies to solve subject-specific tasks • can explore, analyse, formulate and discuss different issues • can analyse and assess different types of sources	The candidate… • can use his/her own academic competence in new and complex contexts • can plan and organise work, independently and in cooperation with others • can use his/her academic knowledge and skills to develop knowledge together with others • can guide others to a certain extent in academic situations • can assess the quality of, and take responsibility for, the results of his/her own and joint work • can reflect on his/her own academic competence as the basis for future choices

Level 5: Tertiary vocational training 1

Knowledge	Skills	General competence
The candidate… • has knowledge of concepts, processes and tools that are used in a specialised field of work • has insight into relevant regulations, standards, agreements and quality requirements • has knowledge of the industry and is familiar with the field of work • can update his/her vocational knowledge, understands the importance of his/her own trade/discipline in a societal and value-creation perspective	The candidate… • can apply vocational knowledge to practical and theoretical problems • masters relevant vocational tools, materials, techniques and styles • can find information and material that is relevant to a vocational problem can study a situation and identify subject-related issues and what measures need to be implemented	The candidate… • understands the ethical principles that apply in the trade/field of work • has developed an ethical attitude in relation to the practising of his/her discipline • can carry out work based on the needs of selected target groups • can build relations with his/her peers, also across discipline boundaries, and with external target groups can develop work methods, products and/or services of relevance to practising the discipline

Level 5: Tertiary vocational training 2		
Knowledge	**Skills**	**General competence**
The candidate… • has knowledge of concepts, theories, models processes and tools that are used in a specialised field of work • can assess his/her own work in relation to applicable norms and requirements • is familiar with the history, traditions, distinctive nature and place in society of the trade/discipline • has insight into his/her own opportunities for development	The candidate… • can explain his/her vocational choices • can reflect over his/her own vocational practice and adjust it under supervision • can find and refer to information and vocational material and assess its relevance to a vocational issue	The candidate… • can plan and carry out vocational tasks and projects alone or as part of a group and in accordance with ethical requirements and principles • can exchange points of view with others with a background in the trade/discipline and participate in discussions about the development of good practice • can contribute to organisational development
Level 6: (part of Bachelor): Higher education of shorter duration		
Knowledge	**Skills**	**General competence**
The candidate… • has knowledge of important topics, theories, problems, processes, tools and methods in the subject area • is familiar with research and development work in the field • can update his/her knowledge in the subject area; is familiar with the subject area's history, traditions, distinctive nature and place in society	The candidate… • can apply academic knowledge to practical and theoretical problems and explain his/her choices • can reflect on his/her own academic practice and adjust it under supervision • can find, assess and refer to information and academic material and relate it to an issue masters relevant academic tools, techniques and styles	The candidate… • has insight into relevant ethical issues relating to the field/profession • can plan and carry out tasks and projects alone or as part of a group and in accordance with ethical requirements and principles • can present important academic material such as theories, problems and solutions, both in writing and orally, as well as using other relevant forms of communication • can exchange opinions with others with a background in the field and participate in discussions concerning the development of good practice • is familiar with new ideas and innovation processes

Level 6: Bachelor (1st cycle)

Knowledge	Skills	General competence
The candidate… • has broad knowledge of important topics, theories, issues, processes, tools and methods within the academic field • is familiar with research and development work in the field • can update his/her knowledge in the field • has knowledge of the history, traditions, distinctive character and place in society of the academic field	The candidate… • can apply academic knowledge and relevant results of research and development work to practical and theoretical problems and make well-founded choices • can reflect upon his/her own academic practice and adjust it under supervision • can find, evaluate and refer to information and scholarly subject matter and present it in a manner that sheds light on the problem • masters relevant scholarly tools, techniques and forms of communication	The candidate… • has insight into relevant academic and professional ethical issues • can plan and carry out varied assignments and projects over time, alone or as part of a group, and in accordance with ethical requirements and principles • can communicate important academic subject matters such as theories, problems and solutions, both in writing and orally, as well as through other relevant forms of communication • can exchange opinions and experiences with others with a background in the field, thereby contributing to the development of good practice • is familiar with new thinking and innovation processes

Level 7: Master (2nd cycle)

Knowledge	Skills	General competence
The candidate… • has advanced knowledge within the academic field and specialised insight in a limited area • has thorough knowledge of the scholarly or artistic theories and methods in the field • can apply knowledge to new areas within the academic field can analyse academic problems on the basis of the history, traditions, distinctive character and place in society of the academic field	The candidate… • can analyse and deal critically with various sources of information and use them to structure and formulate scholarly arguments • can analyse existing theories, methods and interpretations in the field and work independently on practical and theoretical problems • can use relevant methods for research and scholarly and/or artistic development work in an independent manner • can carry out an independent, limited research or development project under supervision and in accordance with applicable norms for research ethics	The candidate… • can analyse relevant academic, professional and research ethical problems • can apply his/her knowledge and skills in new areas to carry out advanced assignments and projects • can communicate extensive independent work and masters language and terminology of the academic field • can communicate about academic issues, analyses and conclusions in the field, both with specialists and the general public • can contribute to new thinking and innovation processes

Level 8: PhD (3rd cycle)		
Knowledge	**Skills**	**General competence**
The candidate… • is at the forefront of knowledge within his/her academic field and masters the field's philosophy of science and/or artistic issues and methods • can evaluate the expediency and application of different methods and processes in research and scholarly and/or artistic development projects • can contribute to the development of new knowledge, new theories, methods, interpretations and forms of documentation in the field	The candidate… • can formulate problems, plan and carry out research and scholarly and/or artistic development work • can carry out research and scholarly and/or artistic research work of a high international standard • can handle complex academic issues and challenge established knowledge and practice in the field	The candidate… • can identify new relevant ethical issues and carry out his/her research with scholarly integrity • can manage complex interdisciplinary assignments and projects • can communicate research and development work through recognised Norwegian and international channels • can participate in debates in the field in international forums • can assess the need for, initiate and practice innovation

Source: Norwegian Ministry of Education and Research, 2014.

A2.2.9. Serbia

Main NQF level descriptor elements in Serbia

Level descriptor elements		
Knowledge	**Skills**	**Attitude and ability**
• general • vocational	• cognitive • psychomotor • social	• independence • responsibility

Descriptors for levels 1 to 8

	Knowledge	Skills	Attitude and ability
	A person who has acquired the qualification level:		
Level 1	• possesses basic general knowledge which enables further learning	• applies skills needed for performing simple and predictable tasks	• performs tasks or learns according to simple oral and written instructions, with direct supervision
Level 2	• possesses general and vocational knowledge of the facts and basic principles necessary for work and/or learning	• applies skills needed for performing less complicated and predetermined operative jobs • handles tools and machines, following detailed technical instructions and using prescribed work material	• performs jobs according to determined technical and technological procedures with occasional supervision • assumes responsibility for applying determined procedures and means and for organising their own work
Level 3	• possesses general and vocational knowledge of the facts, basic principles and processes necessary for work and/or learning	• applies skills needed for performing medium complex, diverse, occasionally nonstandard operative jobs • collects and selects relevant information • handles specialised equipment, machines and plant by using different materials	• performs work operations independently according to technical and technological procedures • organises their own work and/or the work of others • assumes responsibility for applying procedures and means of their own work • demonstrates entrepreneurial spirit
Level 4	• possesses systematised and comprehensive vocational knowledge necessary for work and/or learning	• applies skills needed for performing complex, diverse, frequently nonstandard jobs by using different methods and techniques • performs critical selection of relevant information gathered from various sources in order to apply it in work or learning • handles different equipment, machines and plant by using different materials	• performs jobs independently with occasional consultations • organises and controls their own work and/or the work of a small group • detects problems and participates in solving them • assumes responsibility for selecting procedures and means for their own work and/or the work of others
Level 5	• possesses specialised vocational	• applies skills needed for performing complex,	• performs jobs with a lot of independence when it comes

	Knowledge	Skills	Attitude and ability
	A person who has acquired the qualification level:		
	knowledge necessary for work	specific and mostly nonstandard jobs that demand participation in creating new solutions • handles specialised equipment, machines and plant by using different materials	to making decisions • organises, controls and evaluates their own work and/or the work of others and trains them • assumes responsibility for determining their own work methods and modes, as well as for the operative work of others • manifests resourcefulness in the processes of work improvement and problem solving in unpredictable situations
Level 6.1	• possesses advanced academic or vocational knowledge of theories, principles and processes including evaluation, critical understanding and application in a learning and/or work area	• solves complex problems in a learning and/or work area in standard conditions • applies successful communication skills and interacts with others from different social groups • uses equipment, instruments and devices relevant for a learning and/or work area	• manifests resourcefulness when solving problems in standard conditions; manages complex projects independently and with full responsibility; applies the ethical standards of their profession; organises, controls and trains others to work; analyses and evaluates different concepts, models and principles of both theory and practice • manifests a positive attitude towards the importance of lifelong learning in personal and professional development
Level 6.2	• possesses advanced academic or vocational knowledge of theories, principles and processes including evaluation, critical understanding and application in a learning and/or work area	• solves complex problems in a learning and/or work area in nonstandard conditions • applies successful communication skills and interacts with others from different social groups • uses equipment, instruments and devices relevant for a learning and/or work area	• manifests resourcefulness when solving problems in nonstandard conditions • manages complex projects independently and with full responsibility • applies the ethical standards of their profession • organises, controls and trains others to work; analyses and evaluates different concepts, models and principles of both theory and practice by improving the existing practice • manifests a positive attitude towards the importance of lifelong learning in personal and professional development

	Knowledge	Skills	Attitude and ability
	A person who has acquired the qualification level:		
Level 7.1	• possesses highly specialised academic and/or vocational knowledge of theories, principles and processes including evaluation, critical understanding and application in a learning and/or work area	• solves complex problems in an innovative way that contributes to development in a learning and/or work area • manages and keeps complex communication, interaction and collaboration with others from different social groups • applies complex methods, instruments and devices relevant for a learning and/or work area	• manifests entrepreneurial spirit and undertakes managerial duties • manages the most complex projects independently and with full responsibility • plans and carries out scientific and/or applied research • controls work and evaluates the results of others in order to improve existing practices
Level 7.2	• in a narrow area of expertise, possesses highly specialised academic and/or vocational knowledge of theories, principles and processes including evaluation, critical understanding and application in a learning and/or work area	• solves complex problems in an innovative way that contributes to development in a work area • manages and sustains complex communication, interaction and collaboration with others from different social groups • applies complex methods, instruments and devices relevant for a learning and/or work area	• manifests entrepreneurial spirit and undertakes managerial duties. • manages the most complex projects independently and with full responsibility • controls work and evaluates the results of others in order to improve existing practices
Level 8.1	• possesses extensive in-depth theoretical and practical knowledge necessary for critical analysis and original research in fundamental and applied areas of science	• applies advanced and specialised skills and techniques required to address critical issues in research • applies communication skills to explain and critique the theories, methodologies and conclusions, as well as the presentations of research results in relation to international standards and scientific community • develops new tools, instruments and devices relevant to a scientific and work area	• independently evaluates contemporary results and achievements • designs, analyses and implements the research that makes a significant and original contribution to general knowledge and/or professional practice • manages interdisciplinary and multidisciplinary projects • is able independently to initiate national and international cooperation in science and development
Level 8.2	• possesses theoretical and practical knowledge at the highest level, necessary for critical analysis and original research in fundamental and applied areas of science with the aim of expanding and redefining existing knowledge, science or work areas	• applies advanced and specialised skills and techniques required to address critical issues in research and for expanding and redefining the existing knowledge or work area • applies communication skills to explain and critique the theories, methodologies and conclusions, as well as the presentations of research results in relation to international standards and scientific community • develops new tools, instruments and devices relevant to a scientific and work area	• independently evaluates contemporary results and achievements in order to improve existing – and create new – models, concepts, ideas and theories • manifests innovation, scientific and professional integrity and commitment to the development of new ideas and/or processes that are at the centre of the work or science context, through the principle of self-evaluation of own work and achievements • designs, analyses and implements the research that makes a significant and original contribution to general knowledge and/or professional practice

	Knowledge	Skills	Attitude and ability
	A person who has acquired the qualification level:		
			• manages interdisciplinary and multidisciplinary projects, is able independently to initiate national and international cooperation in science and development

Source: Serbian Ministry of Education, Science and Technological Development, 2016.

A2.2.10. Switzerland

The Swiss national qualifications framework for vocational and professional qualifications (NQF-VPQ) was developed as an eight-level framework, for ease of reference to EQF; however, the first two levels do not contain any qualifications.

Main level descriptor elements of the NQF-VPQ in Switzerland

Level descriptor elements		
Knowledge	**Skills**	**Competence**
• knowledge • understanding	• procedural • sensorimotor	• professional • personal • autonomy • social competences • leadership competences

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence
Level 1	**Knowledge:** • possess basic knowledge specific to the working or learning context and a basic general education **Understanding:** • understand basic, general correlations within the working or learning context and able to explain these in one's own words	**Procedural skills:** • able to recognise basic standardised tasks in a specific field to a certain extent **Sensorimotor skills:** • able to use specific technical aids and instruments to solve basic standardised tasks in a specific field based on specific operational guidelines	**Professional competences:** • possess initial practical experience within a business or similar setting from which further knowledge and skills may be developed • work can be carried out according to instructions **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills under instruction or operational guidelines in clearly defined assigned tasks within a business or similar setting and adhering to mandatory guidelines • **social competences:** able to adapt one's own behaviour to the situation at hand and interact appropriately with others, work within a team and convey information both verbally and in writing
Level 2	**Knowledge:** • possess basic knowledge specific to the working or learning context and a basic general education **Understanding:**	**Procedural skills:** • able to recognise and handle standardised tasks in a specific field to a certain extent based on operational guidelines **Sensorimotor skills:**	**Professional competences:** • drawing from initial work experience, able to use the requisite knowledge and skills at this level to carry out organised and planned work within a business • work can be carried out according to instructions **Personal competences:**

	Knowledge	Skills	Competence
	• understand the general correlations within the specific working or learning context or branch and able to explain these in one's own words	• able to use specific technical aids and instruments to solve standardised tasks in very familiar situations in a specific field based on operational guidelines	• **autonomy:** able to apply the requisite knowledge and skills to assigned tasks in a specific field partly on one's own; able to assist in the planning of simple tasks within a specific field and carry out these tasks in accordance with mandatory guidelines • **social competences:** able to adapt one's behaviour to the situation at hand and interact appropriately with others, work within a team and convey simple information from the specific field both verbally and in writing in a suitable form
Level 3	**Knowledge:** • possess knowledge specific to the working or learning context and general education **Understanding:** • understand the correlations within the specific working or learning context or branch and able to explain these in one's own words	**Procedural skills:** • able to recognise tasks in a specific field • able to carry out tasks based on operational guidelines and known problem-solving strategies **Sensorimotor skills:** • able to use specific technical aids and instruments to solve standardised tasks in familiar situations in a specific field based on operational guidelines	**Professional competences:** • drawing from work experience, able to use the requisite knowledge and skills at this level to ensure the successful application of working techniques and basic working processes within a business • work can partly be carried out on one's own **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills in a specific field partly on one's own; within the specific field, able to share responsibility for simple tasks and adhere to mandatory guidelines • **social competences:** able to adapt one's behaviour to the situation at hand and the needs of others, work within a team and convey information from the specific field both verbally and in writing in a suitable form
Level 4	**Knowledge:** • possess more in-depth knowledge specific to the working or learning context and general education • able to acquire, on one's own, specific technical knowledge **Understanding:** • understand the correlations within the specific working or learning context or branch as well as from thematically related fields and able to explain these in one's own words	**Procedural skills:** • able to recognise tasks in a specific field • able to carry out tasks based on operational guidelines or through the use of known problem-solving strategies **Sensorimotor skills:** • able to use specific technical aids and instruments to solve particularly difficult tasks in familiar situations in a specific field based on operational guidelines or with the help of known methods or tools • able to use basic means of communication	**Professional competences:** • drawing from work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's own working processes within a business • work can be performed on one's own • able to supervise routine tasks of other persons **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills in a specific field mostly on one's own; within the specific field, able to take responsibility for clearly defined tasks and handle changing requirements • **social competences:** able to adapt one's behaviour to the situation at hand and the needs of others, work within a team and convey information from the specific field both verbally and in writing in a suitable form • **leadership competences**: able to show other workers how to perform a specific set of tasks within a given working context
Level 5	**Knowledge:** • possess extensive knowledge of important areas of work	**Procedural skills:** • able to recognise and analyse tasks in a specific field	**Professional competences:** • drawing from work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's own working

	Knowledge	Skills	Competence
	and a more in-depth general education • able to acquire, on one's own, specific technical knowledge **Understanding:** • understand the correlations within or outside the specific working context or branch and able to explain these in one's own words	• able to carry out tasks based on operational guidelines or through the use of known problem-solving strategies **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve fairly difficult tasks in various situations in a specific field based on operational guidelines or with the help of known methods or tools • able to use basic means of communication properly and present information from the specific field	processes within a business • work can be performed in the form of independent and strategic activities • able to supervise and guide routine tasks of other persons **Personal competences:** • **autonomy**: able to apply the requisite knowledge and skills in a specific field on one's own. Within the specific field, able to take responsibility for tasks and handle changing requirements • **social competences**: able to reflect on one's own role and adapt one's behaviour to the situation at hand and the needs of others, work within a team and convey information from the specific field both verbally and in writing in a precise and suitable form • **leadership competences:** able to manage workers in several specific fields of activity within a given working context
Level 6	**Knowledge:** • possess advanced knowledge in all important areas of work and more in-depth general education • able to acquire, on one's own, specific technical and interdisciplinary knowledge **Understanding:** • understand the correlations within or outside the specific working context or branch and able to see linkages with thematically related fields	**Procedural skills:** • able to recognise, analyse and assess complex tasks in a specific field • able to carry out tasks based on operational guidelines or through the use of known problem-solving strategies **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve difficult tasks in various situations in specific fields based on suitable and known methods or tools • able to use basic means of communication properly and present information from the specific field	**Professional competences:** • drawing from versatile work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's own working processes and produce strategic results within a business • work can be performed in the form of independent and strategic activities as well as in the form of consulting • able to handle complex technical activities and projects and take important decisions **Personal competences:** • **autonomy:** able to apply the requisite knowledge and skills in a specific field and thematically related fields on one's own. Within the entire specific field, able to take responsibility for tasks and processes and handle changing requirements • **social competences:** able to reflect on one's own role and the role of others and conscientiously maintain these roles in dealings with others, work within a team and convey information from the specific field both verbally and in writing in a precise, understandable and suitable form • **leadership competences:** able to manage workers in several fields of activity within a given working context, partly assume responsibility for these workers and support them
Level 7	**Knowledge:** • possess advanced, solid and detailed knowledge of all	**Procedural skills:** • able to recognise, analyse and assess complex tasks in a given	**Professional competences:** • drawing from versatile work experience, able to use the requisite knowledge and skills at this level to ensure smooth operation of one's

	Knowledge	Skills	Competence
	important areas of work and extensive general education • able to acquire, on one's own, specific technical and interdisciplinary knowledge **Understanding:** • understand the complex correlations within or outside the specific working context or the branch and able to see interdisciplinary linkages with thematically related or unrelated fields	interdisciplinary field • able to carry out tasks based on operational guidelines or through the use of suitable, innovative problem-solving strategies **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve very difficult and challenging tasks in every situation from thematically related fields based on suitable and at times entirely novel methods or tools • able to make full use of the possibilities of various means of communication and present complex information from the specific field	own working processes and produce strategic results within a business • work can be performed in the form of managerial and consulting activities as part of a complex working process and contribute to the further development of the business or improvement of working processes • able to plan and adopt new strategic approaches to complex, unforeseen activities and projects **Personal competences:** **autonomy:** able to apply the requisite knowledge and skills in a challenging field and thematically related fields independently and conscientiously; able to take responsibility for increasingly complex tasks and processes and handle changing requirements • **social competences:** able to reflect on one's own role and the role of others, define these roles and conscientiously maintain them in dealings with others; able to work within a team and to convey complex information from the specific field both verbally and in writing in a precise, understandable and suitable form, having the desired impact on and being tailored to the intended recipients • **leadership competences:** able to manage workers in a field of activity within a given working context, completely assume responsibility for these workers and support them in a targeted fashion
Level 8	**Knowledge:** • possess advanced, solid, specialised, detailed and systematic knowledge in all areas of work and extensive general education • able to acquire, on one's own, specific technical and interdisciplinary knowledge **Understanding:** • understand the complex correlations within or outside the specific working context or branch and able to see interdisciplinary linkages with complex thematically related or unrelated fields	**Procedural skills:** • able to fully recognise, analyse and assess complex and highly challenging tasks in a given interdisciplinary specific field • able to carry out tasks based on operational guidelines or through suitable, innovative problem-solving strategies and make relevant prognoses or recommendations **Sensorimotor skills:** • able suitably to prepare and use specific technical aids and instruments to solve novel, very difficult and highly challenging tasks in every situation from thematically related fields based on suitable and entirely novel or innovative methods or tools	**Professional competences:** • Drawing from extensive work experience, able to use the requisite knowledge and skills at this level in a targeted fashion to ensure smooth operation of one's own working processes and produce strategic results within a business • work can be performed in the form of managerial and consulting activities as part of one or more complex working processes and contribute to the further development of the business or improvement of working processes **Personal competences:** • **autonomy:** able fully and conscientiously to apply the requisite knowledge and skills in a specific highly challenging field and thematically related fields on one's own; able to take responsibility for complex tasks and processes and handle changing requirements within the entire highly challenging field • **social competences:** able to reflect on and shape one's own role and the role of others, behave responsibly in dealings with others, work in a team and strategically apply one's analytical skills within the working context; able to convey complex and differentiated information from the specific field both verbally and in writing in a precise, understandable,

	Knowledge	Skills	Competence
		• able to make full use of the possibilities of various means of communication and present complex and differentiated information from the specific field	suitable and professional form, having the desired impact on and being tailored to the intended recipients • **leadership competences:** able to manage workers in a highly challenging field of activity within a given working context, completely assume responsibility for these workers and support them in a targeted fashion to take personal initiative

Source: SERI (State Secretariat for Education, Research and Innovation of the Swiss Confederation), 2015; Swiss Government, 2014.

A2.2.11. Turkey

Main NQF level descriptor elements in Turkey

Knowledge	Skills	Competence
• theoretical • factual	• utilisation of knowledge • problem solving	• taking responsibility and/or displaying autonomy, determination and satisfaction of learning requirements, taking into consideration social and moral issues and responsibilities

Descriptors for levels 1 to 8

	Knowledge	Skills	Competence
Level 1	• have a general knowledge of self and environment	• have basic skills required to carry out simple tasks	• carry out simple tasks under guidance and supervision
Level 2	• have an elementary factual knowledge in a field of work or study	• have basic skills required to use necessary information in order to carry out tasks and to solve potential simple problems	• carry out simple tasks under supervision with limited autonomy • have awareness of own learning needs within the scope of a lifelong learning approach
Level 3	• have an elementary theoretical knowledge and moderate factual knowledge in a field of work or study	• have skills required to select and apply data, methods, tools and materials in order to carry out tasks and solve problems	• take responsibility in carrying out tasks • complete tasks in consideration of changing situations • identify and meet own learning needs under guidance within the scope of a lifelong learning approach
Level 4	• have a moderate theoretical and operational knowledge and good factual knowledge in a field of work or study	• have cognitive and practical skills required to perform procedures and generate solutions to problems specific for a field of work or study	• take full responsibility in completing tasks within predictable, but changeable contexts • supervise the ordinary tasks of others, and take limited responsibility in evaluating and improving such tasks • meet own learning needs, and define proactive learning goals under guidance within the scope of a lifelong learning approach • have awareness of the relationship between knowledge, skills, behaviours and attitudes in a field of work or study with moral issues and responsibilities

	Knowledge	Skills	Competence
Level 5	• have comprehensive, theoretical and factual knowledge in a field of work or study and be aware of the boundaries of that field	• have comprehensive cognitive and practical skills required to develop creative solutions to abstract problems, whose limits are defined, and concrete problems	• carry out management and supervision tasks in contexts with unpredictable changes • evaluate and improve own and others' performance level • be able to interact in operations in contexts of work or study including the management of projects • have general awareness of the scope of a lifelong learning approach for a field of work or study as well as the relationship of this scope with formal, non-formal and informal ways of learning • be aware of the relationship between knowledge, skills, behaviours and attitudes in a field of work or study with moral issues and responsibilities
Level 6	• have advanced theoretical, methodological and factual knowledge in a field of work or study, including inquiring thinking	• have advanced skills, including the quality of mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	• make decisions by taking responsibility in unpredictable work or study contexts, and manage complex technical or professional activities or projects • take responsibility in managing the professional development of individuals and groups • have experience in the concepts, policies, tools and practices of the lifelong learning approach for a field of work or study as well as their relationship with formal, non-formal and informal ways of learning • have awareness of social and moral issues in assessing work or study
Level 7	• have advanced specialised knowledge, some of which is at the forefront in a field of work or study, as the basis for original ideas and/or research • have an inquiring approach to knowledge issues in his/her field and at the interface between different fields related to his/her field	• have advanced problem-solving skills required in research and/or innovation activities that are carried out to develop new knowledge and methods in a field of work or study and to integrate knowledge from different fields • have skills required to understand, design, apply and adapt advanced research operations as a team member or partially autonomously	• manage and transform unpredictable and complex work or study contexts that require new strategic approaches • have experience in managing changes within a complex context • take responsibility in contributing to professional knowledge and practice and/or evaluating the strategic performance level of teams • show leadership in the concept, policy, tools and practices of the lifelong learning approach to knowledge in a field of work or study and the interface between different fields as well as their relationship with formal, non-formal and informal ways of learning • integrate knowledge and make judgements in a field of work or study in consideration of social and moral issues and responsibilities

	Knowledge	Skills	Competence
Level 8	• have the most advanced systematic knowledge and inquiry analysis capacity in the theory, practice, method and techniques of a field of work or study • have the most advanced interface knowledge in different fields of work or study related to a particular field of work or study	• have the most advanced and specialised skills, including synthesis and evaluation, that require the use of knowledge, methods and techniques, required to solve critical problems in the most advanced research and/or innovation within a field of work or study and to extend and redefine existing knowledge or professional practice • have skills required to understand, design, apply and adapt advanced research processes autonomously • have problem-solving skills, including the use of methods and approaches from different fields, required to solve new and complex problems in his/her field	• demonstrate competence in the development of new ideas and processes at the forefront of work or study contexts, including strong competence, innovation, autonomy, scientific and professional consistency and research • show leadership in developing new and original approaches to redefine or extend existing knowledge or professional practice in a field of work or study • develop original policies and practices for the promotion of the lifelong learning approach to knowledge in a field of work or study as well as the interface between different fields in unpredictable and complex contexts that require innovation, and for the promotion of this approach through formal, non-formal and informal ways of learning • create new knowledge in a field of work or study in consideration of social and moral issues and responsibilities

Source: Turkish Ministry of Labour and Social Security, 2015; Turkish Vocational Qualification Authority, 2016.

Analysis and overview of NQF level descriptors in European countries

Level descriptors are essential elements of national qualifications frameworks (NQF) established and implemented across Europe. They define what is meant by learning outcomes, describing what an individual is expected to know, be able to do and understand, having acquired a qualification at a particular level.

This Cedefop publication shows that all 39 countries taking part in the implementation of the European qualifications framework (EQF) have now defined – and for a large part adopted – their levels of learning outcomes.

The analysis illustrates the influence of the EQF on national level descriptors, and demonstrates how countries have adjusted and further developed the learning outcomes approach according to national needs and priorities. National level descriptors have mostly been developed through extensive dialogue between different stakeholders.

This report celebrates the 10th anniversary of the EQF in 2018 and its further implementation, as anchored in the revised EQF recommendation (2017).

5566 EN - TI-BC-18-001-EN-N - doi:10.2801/566217

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