Ministry of Science, Education and Sports
Agency for Science and Higher Education

Referencing and Self-certification Report

of the Croatian Qualifications Framework
to the European Qualifications Framework
and to the Qualifications Framework of
the European Higher Education Area

Zagreb, 15 January 2014

The Croatian Committee for Implementation of the Croatian Qualification Framework CROQF was composed of: Prof. Slobodan Uzelac, PhD (President), Radovan Fuchs, PhD (Vice-president), Želimir Janjić, Davor Ljubanović, Igor Lučić, Darko Horvat, Petar Uzorinac, Mirjana Zećirović, Marina Tatalović, Nevio Šetić, PhD, Prof. Vedran Mornar, PhD, Prof. Drago Žagar, PhD, Prof. Aleksa Bjeliš, PhD, Prof. Mile Dželalija, PhD, Prof. Nada Čikeš, PhD, Ivan Bota, Prof. Leo Budin, PhD, Mato Topić, Gordana Kovačević, Zdenko Duka, Bernard Jakelić, Ana Knežević, Prof. Igor Radeka, PhD, Suzana Hitrec, mr. sc. Ninoslav Šćukanec.

The Referencing and Self-certification Report of the CROQF to the EQF and the QF-EHEA was prepared by the National experts: Prof. Ružica Beljo Lučić, PhD, Prof. Mile Dželalija, PhD, (Head), mr. sc. Emita Blagdan, mr. sc. Ana Tecilazić-Goršić, Prof. Snježana Knezić, PhD, Marinela Krešo, Jelena Matković, Jasmina Skočilić, Mirna Štajduhar, in collaboration with International experts: Sjur Bergan (Council of Europe), Prof. Ewa Chmielecka, PhD (Poland), Meta Dobnikar, PhD (Slovenia), Michael Graham (ETF), Eduard Staudecker (Austria).

Editorial staff: Prof. Mile Dželalija, PhD, Prof. Ružica Beljo Lučić, PhD, mr. sc. Emita Blagdan, mr. sc. Ana Tecilazić-Goršić, Prof. Jasmina Havranek, PhD, Staša Skenžić.

National advisors: Prof. Roko Andričević, PhD (member of the Accreditation Council of the Agency for Science and Higher Education), mr. sc. Mislav Balković (Croatian Employers' Association), Alenka Buntić Rogić (National Centre for the External Evaluation of Education), Prof. Nada Čikeš, PhD, (University of Zagreb), Luka Juroš (Ministry of Science, Education and Sports), Ivana Puljiz (Agency for Mobility and EU Programmes), Prof. Boris Trogrlić, PhD (University of Split), Prof. Vlasta Vizek Vidović, PhD (president of the Accreditation Council of the Agency for Science and Higher Education).

This document establishes the referencing of the Croatian Qualifications Framework to the European Qualifications Framework (EQF) and the Qualifications Framework of the European Higher Education Area (QF-EHEA) in accordance with the criteria and procedures agreed upon by the EQF Advisory Group and the Bologna Follow-Up Group.

This report is available on the CROQF website: www.kvalifikacije.hr as well as the website of the Croatian Agency for Science and Higher Education: www.azvo.hr.

Table of Contents

Executive Summary **5**

Acronyms **7**

1. Introduction **8**

2. Background **9**

2.1. Croatian Background 9

2.1.1. Preschool Education 11

2.1.2. Primary Education 13

2.1.3. Secondary Education 15

2.1.4. Postsecondary Professional Education and Training 28

2.1.5. Higher Education 29

2.1.6. Diploma Supplement 49

2.1.7. Previous Qualifications in Croatia 52

2.1.8. Recognition of Foreign Qualifications in Croatia 52

2.2. European Background 54

2.2.1. European Qualifications Framework 54

2.2.2. Qualifications Framework of the European Higher Education Area 55

2.2.3. Rationale and Purpose of the Referencing of the CROQF to the EQF and the QF-EHEA 56

3. Croatian Qualifications Framework **58**

3.1 Development of the CROQF 58

3.2 Role of the CROQF 59

3.3 Main Concepts of the CROQF 61

3.4 Units/Modules of Learning Outcomes 62

3.5 Workload/Volume and Profile 63

3.6 Levels and Level Descriptors 64

3.7 Quality Assurance 70

3.7.1. Involvement of Stakeholders and Experts 72

3.7.2. Fit to Purpose 72

3.7.3. Curricula 73

3.7.4. Assessment Criteria and Procedures 73

3.7.5. Awarding Criteria and Procedures 74

3.7.6. CROQF Register 74

3.8 Recognition of Non-formal and Informal Learning 74

4. Referencing and Self Certification of the CROQF to the EQF and QF-EHEA **76**

4.1. General Policy Approach 76

4.2. Structures – Bodies and Responsibility 77

4.3. The Referencing and Self-Certification Process 78

4.4. Communication and Consultation Process with Stakeholders 81

4.5. Self-Certification of the CROQF against the QF-EHEA 82

4.5.1. Types of Higher Education Degrees 82

4.5.2. Self-Certification of the CROQF against the QF-EHEA 86

4.6. Referencing of the CROQF to the EQF 95

4.7. Referencing Process: Challenges and Specific Issues, Recommendations 102

5. Fulfilment of Criteria and Procedures **103**

5.1. Response to the EQF Criteria and Procedures 103

5.2. Response to the QF-EHEA Criteria and Procedures 109

5.2.1. Responses to the QF-EHEA Criteria 110

5.2.2. Responses to the QF-EHEA Procedures 115
5.3. Response to the Common Principles for Quality Assurance 119
6. Further Development of the CROQF 123
References 124
List of Figures 127
List of Tables 127

Executive Summary

This report intends to verify the compatibility of the Croatian Qualifications Framework (CROQF) with the European Qualifications Framework (EQF) and the Qualifications Framework of the European Higher Education Area (QF-EHEA). It presents the existing Croatian qualifications system and the development and implementation of the CROQF. Moreover, it gives background of the fulfilment and response to the EQF and QF-EHEA criteria, procedures and common quality assurance principles, demonstrating that the Croatian Qualifications Framework is compatible with both overarching frameworks.

The development of the EQF for lifelong learning began in 2004 as a response to requests from Member States, social partners and other stakeholders for a common reference tool to increase the transparency of qualifications. Consultation on an initial Blueprint was undertaken in 2005. The consultation demonstrated that there was widespread support for the initiative and the proposal was subsequently adopted by the European Commission in September 2006. This proposal recommended the establishment of an overarching qualifications framework which would serve as a translation device to make qualifications more comprehensible across the different countries and systems in Europe. The EQF is based on eight qualifications levels described in terms of the learning outcomes of knowledge, skills and wider generic competencies (autonomy and responsibility). The aim of the EQF is to support citizens' mobility and lifelong learning. The Recommendation for the establishment of the EQF was formally adopted by the European Parliament and the Council in 2008. The referencing process is intended to enable those outside a particular country to better understand the country's national qualifications system and so to promote citizens' mobility between countries.

In parallel with the establishment of the EQF, the Ministers for higher education that gathered at the Bologna conference in Berlin in 2003 called for the elaboration of an overarching Framework for Qualifications of the European Higher Education Area (QF-EHEA). Subsequently, the QF-EHEA i.e. the "Bologna Framework", was adopted by European Ministers for higher education in Bergen in May 2005. In the Leuven/Louvain-la-Neuve Communiqué the Ministers stated that they "aimed at having national qualifications frameworks implemented and prepared for self-certification against the overarching QF-EHEA by 2012".

Together with the EU Member States and candidate countries, Croatia is invited to relate its national qualifications levels to the relevant levels of the EQF. Moreover, by having participated in the Bologna Process since 2001, Croatia is equally invited to self-certify its higher education qualification levels to the levels of the QF-EHEA.

Development of the CROQF has been taking place since 2007 as a response to the need for a national framework of qualifications encompassing all awards for all aspects of education and training into a single transparent qualifications framework. After the first initiative of the Ministry of Science, Education and Sports of the Republic of Croatia in 2006, the Croatian

Government established the National Committee for Development and Implementation of the CROQF, composed of all relevant stakeholders and an Expert Team to assist the Government Committee in this endeavour. The development of the CROQF was thus based on consultations with all stakeholders.

In 2011, groups of experts and stakeholders gathered together with the objective to propose the CROQF Act. The Committee of all stakeholders, established by the Ministry of Science, Education and Sports in 2012, has developed the final proposal of the CROQF Act and needed bylaws for development and implementation of the CROQF. In February 2013 the Croatian Government adopted the CROQF Act which gives the necessary legislative and institutional framework for further development and implementation of the CROQF as well as for the referencing and self-certification of the CROQF to the EQF and the QF-EHEA.

According to the CROQF Act, the Ministry of Science, Education and Sports (MSES) is the National Coordinating Body responsible for the development and implementation of the CROQF as well as the designated National Coordination Point (NCP) responsible for coordination of the referencing of CROQF levels to the EQF and for the self-certification of the CROQF against QF-EHEA using transparent methodology, providing access to information, guiding stakeholders through the referencing process, and promoting the participation of stakeholders in the referencing process.

To generate trust among national and international stakeholders, and to fulfil one of the criteria for the referencing process, the MSES has invited five international experts to join the CROQF Expert Team in drafting the Referencing and Self-certification Report. The experts have been chosen on the basis of their expertise in qualifications systems and frameworks. Moreover, as they represent bodies and countries with different education systems, their recommendations and advices have been precious in guiding Croatian experts in the referencing process.

The CROQF has been defined as a single national framework through which all learning achievements may be measured and compared in a coherent way, defining the relationship between all education and training awards. It has 10 levels and sublevels described in terms of learning outcomes. The Report provides detailed tables of learning outcomes ascending from level 1 to level 8.2 as referenced to the EQF and the QF-EHEA in order to facilitate a better understanding of the qualifications being awarded in Croatia and to demonstrate the link between CROQF level descriptors and EQF level descriptors.

Furthermore, the Report includes responses to each of the referencing criteria and procedures developed in order to guide and oversee the referencing process.

Finally, the last part of the Report goes beyond the referencing process, providing a vision for the further development of the CROQF as the main instrument for overall reform of the Croatian education and training system.

Acronyms

ASHE	Agency for Science and Higher Education
AVETAE	Agency for Vocational Education and Training and Adult Education
CBS	Croatian Bureau of Statistics
CNES	Croatian National Educational Standard
CoE	Council of Europe
CPC	Council of Polytechnics and Colleges
CROGE	Croatian Credit for General Education
CROQF	Croatian Qualifications Framework
EQF	European Qualifications Framework
ETTA	Education and Teacher Training Agency
HEI	Higher Education Institution
HROO	*Hrvatski bod općeg obrazovanja* (see CROGE)
IB MYP	International Baccalaureate Middle Years Programme
MSES	Ministry of Science, Education and Sports
NCEEE	National Centre for the External Evaluation of Education
NCHE	National Council for Higher Education
NCP	National Coordination Point
NQF	National Qualifications Framework
OG	Official Gazette
QF-EHEA	Qualifications Framework of the European Higher Education Area

1. Introduction

The Recommendation of the European Parliament and of the Council on the establishment of the EQF invites Member States and Croatia as a candidate country to relate their national qualifications levels to the relevant levels of the European Qualifications Framework (EQF). Moreover, having participated in the Bologna Process since2001, Croatia is equally invited to self-certify its higher education qualification levels to the levels of the Qualifications Framework of the European Higher Education Area (QF-EHEA).

The main purpose of this document is to reference the Croatian Qualifications Framework (CROQF) against the EQF and to self-certify it against the QF-EHEA, thus demonstrating that the CROQF is compatible with both overarching frameworks.

The Referencing and Self-certification Report of the CROQF to the EQF and to the QF-EHEA is structured, including this introduction, in six main parts. In the second part, the national and international background for the referencing process is given. The Croatian education system is thoroughly presented with the intention to make it understandable for international as well as national readers. Moreover, background information related to the development of the EQF and QF-EHEA is provided with special emphasis on the benefits of the referencing and self-certification process for citizens holding Croatian qualifications.

In the third part, the development, role, main concepts and objectives of the CROQF are elaborated together with the explanation of units/modules of learning outcomes, volume and profile, levels and level descriptors and finally, quality assurance and recognition of prior learning.

The fourth part is the core of the Referencing and Self-certification Report in that it explains the detailed cross-referencing to the EQF and the QF-EHEA in terms of an outline of comparisons between the level descriptors of the CROQF and those of the EQF and the QF-EHEA with examples taken from existing programmes based on learning outcomes, methodologies, and the bodies and structures involved both in the referencing and self-certification process as well as in the overall development and implementation of the CROQF.

In the fifth part, Croatia's responses to each of the criteria and procedures prescribed for the referencing and self-certification process are demonstrated.

Finally, the last chapter of the Referencing and Self-certification Report provides a perspective for the further development of the CROQF.

2. Background

2.1. Croatian Background

The development of a society based on knowledge and the process of lifelong learning has been adopted in Croatia as the central approach for meeting the needs of developing new areas of knowledge and technology, responding to frequent changes on the labour market and the ever-increasing demand for a highly qualified work force, the demographic ageing of the population, the process of globalisation and the accession of the Republic of Croatia to the European Union. Accordingly, developmental goals in the area of education also reflect the commitment of the Republic of Croatia, through national educational policies, to create and develop a knowledge-based society, and to speed up reform at all levels of the educational system. Based on the Education Sector Development Plan 2005-2010 (Zagreb, September 2005), the Development Strategy for Vocational Education System in the Republic of Croatia 2008 – 2013 (Zagreb, July 2008), the Strategy for the Construction and Development of the National Curriculum for Preschool Education, Primary and Secondary School Education (Zagreb, 2007) and the Strategy for Adult Education (Zagreb, July 2004), Croatia set ambitious reform goals over the recent period. With the overall aim of developing a knowledge-based society and economy and increasing quality in education in accordance with the EU Lisbon Strategy provisions, Croatia has taken a number of substantial steps to improve the effectiveness of its educational system, to establish comprehensive national standards and to attain more coherence between education and training and the needs of the labour market. Work is now under way to develop education system strategy until 2020.

All of the mentioned initiatives have also taken into account the goals stated in the Europe 2020 document specifically addressing the overall quality of all levels of education and training in the EU, combining both excellence and equity, as well as promoting students' and trainees' mobility and increasing the employment opportunities of young people.

The Croatian education system encompasses services at the following levels: **preschool**, **primary**, **secondary** and **higher education**, including primary and secondary education and training for adults. Attention is also given to the principle of lifelong learning**,** with the aim of including adults and the unemployed in flexible educational and training programmes to qualify them for participation in the labour market.

As shown in the Figure 2.1, the existing education and training system in Croatia consists of:

- Preschool education;
- Primary education;
- Secondary education, with:
    - General education in secondary schools (Gymnasium);
    - Education in art schools;
    - Vocational education and training through:

        - Special or adjusted programmes;
        - 1-year programmes;
        - 2-year programmes;
        - 3-year programmes;
        - 4-year programmes, including 5-year programmes for regulated occupations in health sector;
- Postsecondary (non-higher education) professional education and training programmes;
- Higher education, with the following structure:
    - University study:
        - Undergraduate university study programmes;
        - Graduate university study programmes;
        - Graduate university study programmes – specialist;
        - Postgraduate university study programmes;
    - Professional study:
        - "Short cycle" professional study programmes;
        - Undergraduate professional study programmes;
        - Specialist professional graduate study programmes.

Besides the usual initial education, as indicated above, there is also primary and secondary education and organised training for adults.

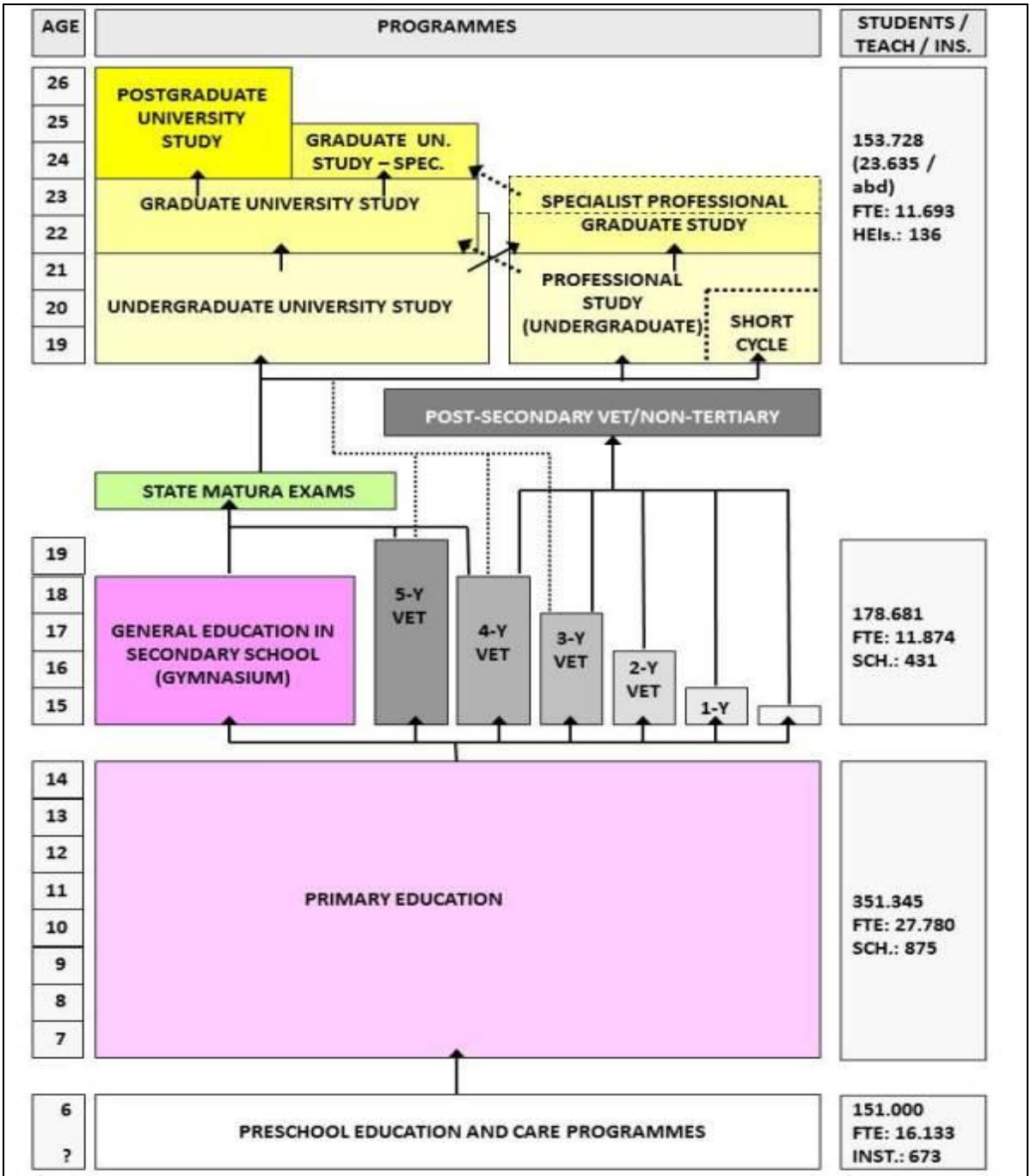

Figure 2.1: Education and training system in Croatia (source: MSES, 2012).

2.1.1. Preschool Education

According to the available data in 2012 on preschool education, the total number of preschools is 693, of which 254 (36.47 %) are private, while 439 (63.53 %) are public. There are about 152,123 (64.40 %) children in preschool programmes (about 23,990 in private and 127,997 in public). According to the Education Development Plan 2011-2013, the development goal is to increase the number of children enrolled in preschool programmes to 62 %.

There are also 5,984 (5.28 %) children with disabilities and 2,107 (1.86 %) children of national minorities. The total number of employed people in preschools is 16,432 of which 10,334 are working as preschool teachers.

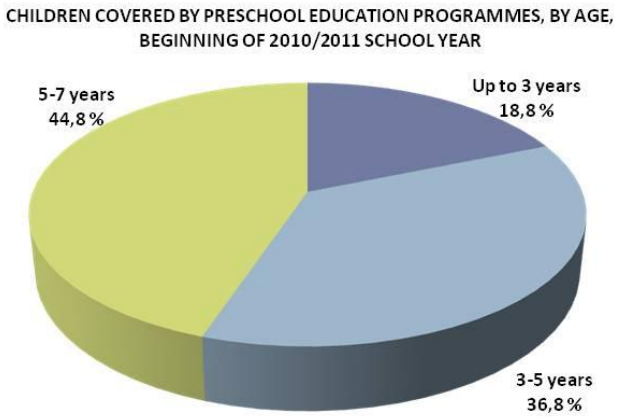

Figure 2.2: Children covered by preschool education programmes (source: CBS, 2011).

A total of 182 preschools have been built since 2005. In the period between 2006 and 2009, the Ministry equipped 96 new preschools with funds from the State Budget and with the financial support of the World Bank, in municipalities and towns in 20 counties[1] that previously had no organised programmes for preschool children.

Legislation in the field of preschool education and care programmes:

- Preschool Education Act (OG 10/97, 107/07);
- Act on Education and Teacher Training Agency (OG 85/06);
- National Pedagogical Standard for Preschool Education (OG 63/08, 90/10);
- National Curriculum Framework for Preschool Education and General Compulsory and Secondary Education (MSES, July 2010).

Main governing bodies:

The Ministry of Science, Education and Sports (MSES) is the policy body responsible for planning, funding and monitoring the overall education system. The MSES is responsible for administrative and other activities related to preschool education, securing financial and material conditions for work. Besides the MSES, the Ministry of Social Welfare Policy and Youth is also responsible in the field of preschool education and care programmes. The Education and Teacher Training Agency (ETTA) is a public institution responsible for the provision of professional and advisory support in the area of general education in Croatia. It was firstly established as an institute for teacher support in 1874, and its role has been changing throughout time. Its legal successor, the Institute of Education of the Republic of

1 Report on the Implementation of the Joint Assessment of the Employment Policy Priorities of the Republic of Croatia for 2009, June 2010, Zagreb

Croatia was founded in 2002 (OG 153/02) and was re-named and restructured as the Education and Teacher Training Agency by the Act on the Education and Teacher Training Agency (OG 85/06).

Table 2.1: Preschool education

Entry requirements:	No younger than 6 months. Age 6 – for preschool preparation programme (those who were not in preschool education before)
Education and training:	Preschool programmes encompass regular, special and alternative programmes as well as programmes for children with disabilities, for gifted children and for children of national minorities. Children with disabilities may be integrated into any of the preschool programmes. In addition, there are special education institutions for children with disabilities, depending on disabilities. Providers of preschool programmes are accredited public and private kindergartens. Preschool education starts with the age of 6 months and last until enrolment in primary school. A one-year preschool preparation programme is compulsory for all children. Age 6 – preschool preparation programme for those who were not in preschool programmes in preschool institutions.
Financing:	Public (local and/or state) and private (parents), about 50 % each
Teachers qualifications:	Qualification for preschool teachers (first cycle qualifications); psychology (second cycle)
Expected learning outcomes:	Learning outcomes, as defined by the National Curriculum for Preschool, General Compulsory and Secondary School Education, encompass the development of competencies related to both the self-awareness and social awareness of a child. Learning outcomes include the use of basic terms and ideas related to a child's perception of himself, his behaviour and his choices, his understanding of relationships with others and with the world around him; social abilities such as communication with others and adaptation to different environments; acquisition of basic learning to for competence in the development of logical thinking and arguing, drawing conclusions and problem resolution, etc.
Assessment and awards:	None
Progression routes:	Primary education
Labour market:	NA
Quality assurance:	External quality assurance is provided by the NCEEE, including development of methodology.
Example:	NA

2.1.2. Primary Education

Primary education lasts eight years and, as a rule, is compulsory for all children between the ages of six/seven and fifteen (exceptionally, up to age of 21 for pupils with disabilities). Its purpose is to enable pupils to achieve competencies necessary for living and for further education. Classes in primary schools are conducted according to the Primary School Curriculum (MSES, 2006), in regular both public and private schools. Waldorf and Montessori primary schools in Zagreb and Rijeka conduct classes according to an alternative

curriculum, while *Matija Gubec* primary school in Zagreb implements the IB MYP programme (an international syllabus) along with the regular primary school curriculum.

The drop-out rate in primary education has been decreasing. The completion rate for primary education in last few years is as follows: 2004/2005, 99.65 %, 2005/2006, 99.75 %, 2006/2007, 99.58 %, 2007/2008, 99.57 %, 2008/2009, 99.71 %, 2009/2010, 99.64 %.

Legislation in the field of primary education:

- Primary and Secondary School Education Act (OG 87/08, 86/09; 92/10; 105/10, 90/11, 5/12, 16/12);
- Act on the Education and Teacher Training Agency (OG 85/06).

Education strategies and other related documents:

- Croatian National Educational Standard (CNES) (MSES, 2005);
- National Pedagogical Standard for Primary Education (OG 63/08, 90/10);
- National Curriculum Framework for Preschool Education and General Compulsory and Secondary Education (MSES, July 2010).

Main governing bodies:

The Ministry of Science, Education and Sports (MSES) is the policy body responsible for planning, funding and monitoring the overall education system. The MSES is responsible for administrative and other activities related to primary education, securing financial and material conditions for work.

Public schools are entirely financed by the State Budget and private schools are co-financed by the State Budget on the basis of criteria prescribed by the Minister of Education and of results of external evaluation. Private schools providing alternative education programmes are co-financed up to 80 % by the State Budget.

Table 2.2: Primary education

Entry requirements:	Compulsory for children of the age of 6 by March 31st of the current year. Fulfilment of entry requirements is determined by education and medical experts in schools and is based on individual assessments of each pupil.
Education and training:	Last for a period of 8 years; Providers of the programmes are accredited public and private primary schools.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects
Expected learning outcomes:	Defined in the National Curriculum Framework for Preschool, General Compulsory and Secondary School Education
Assessment and awards:	The assessment is internal, continuous and final. Upon completion of primary school, pupils are awarded a certificate of completion (*svjedožba o završenom osmom razredu)*.
Progression	Pupils, as well as adult participants, holding this certificate can enter secondary

routes:	education.
Labour market:	NA
Quality assurance:	Education, assessment and awards are ensured by internal and external quality assurance systems (MSES, ETTA, NCEEE).
Example:	NA

2.1.3. Secondary Education

Depending on the type of educational programme offered, secondary schools are classified as follows: gymnasium (general or specialised); vocational schools (technical, industrial, crafts and others); arts schools (music, dance, visual arts and other art forms).

The education of pupils with disabilities is provided in secondary schools in regular or special classes, in educational groups through the use of an individualised approach or adjusted programmes, as well as in special institutions. Special institutions are under the jurisdiction of two ministries: the Ministry of Science, Education and Sports and the Ministry of Social Welfare Policy and Youth.

Secondary education in Croatia consists of:

- General education in secondary schools (Gymnasium);
- Education in art schools;
- Vocational education and training through:
    - Special or adjusted programmes;
    - 1-year programmes;
    - 2-year programmes;
    - 3-year programmes; a part of programmes (54 programmes fall under ministry responsible for entrepreneurship and crafts and the Chamber of trade and crafts jurisdiction)
    - 4-year programmes, including 5-year programmes for regulated occupations in the health sector.

In the 2010/2011[2] school year, secondary education was provided by 431 schools. The number of pupils in secondary schools in the 2010/2011 school year was 178,681. In 2009/2010, 23,606 (FTE 11,874) teachers and school assistants worked in secondary schools.

Legislation related to secondary education:

- Primary and Secondary School Education Act (OG 87/08, 86/09, 92/10, 105/10, 90/11, 5/12, 16/12);
- Vocational Education and Training Act (OG 30/09);
- Art Education Act (OG 130/11);
- Crafts Act (OG 77/93, 90/96, 102/98,64/01, 71/01, 49/03, 68/07, 79/07);
- Ordinance on State Matura (OG 127/10);

2 Croatian Bureau of Statistics, Statistical information, 2011

- Ordinance on the Central Register of State Matura Exams (OG 53/11);
- Ordinance on the Organization of Teaching in VET Schools (OG 140/09);
- Ordinance on Minimum Conditions for a Contract of Apprenticeship (OG 18/08, 19/10);
- Ordinance on the Implementation of Apprenticeship Programmes and In-service Trainings for Crafts and on the Rights, Obligations, Monitoring, Assessment and Evaluation of Apprentices (OG 69/04);
- Ordinance on Drafting and Fulfilment of Requirements of Final Examination (OG 118/09);
- Ordinance on the Teaching Norms in the Secondary Education Institutions (OG 94/10);
- Ordinance on the Content and Form of the Certificate of Completion and Other Public Documents And on the Pedagogical Documentation and Records in the Educational Institutions (OG 32/10, 50/11, 145/11);
- Ordinance on the Method, Procedures and Elements of the Evaluation of the Primary and Secondary School Students (OG 112/10);
- Ordinance on the Manner of Organizing and Conducting the Teaching in Vocational Schools (OG 140/09).

Education strategies and other related documents:

- National Pedagogical Standards for Secondary Education (OG 63/08, 90/10);
- National Curriculum Framework for Preschool Education and General Compulsory and Secondary Education (MSES, July 2010);
- Development Strategy for Vocational Education System in the Republic of Croatia 2008 – 2013.

Main governing bodies:

The Ministry of Science, Education and Sports (MSES) is the policy level body responsible for planning, funding and monitoring the overall education system. The MSES is responsible for administrative and other activities related to primary education, securing financial and material conditions for work.

The Education and Teacher Training Agency (ETTA) is a public institution responsible for the provision of professional and advisory support in the area of general education in Croatia, including secondary level.

The Agency for Vocational Education and Training is a public institution founded in 2005 by the Decree of the Government of the Republic of Croatia, whose activities include the planning, development, organization, monitoring and evaluation of school and non-school systems in the VET area. The Agency's work is governed by the Vocational Education and Training Act. The Agency merged with the Agency for Adult Education in February 2010 by adoption of the Act on Agency for Vocational Education and Training and Adult Education.

The National Centre for the External Evaluation of Education (NCEEE) – The Act on the National Centre for the External Evaluation of Education entered into force in January 2005, thereby entrusting the NCEEE with the preparation of National Exams and the *State Matura*

as a permanent system of external evaluation of work and achievement. The *State Matura* is administered at the completion of secondary education. The *State Matura* examination is organised centrally and administered to all candidates at the same time. The primary condition for the administration of the *State Matura* and of other external and parallel exams is that it should ensure a fair, valid, and reliable evaluation of students' achievements and competencies. The *State Matura* should stimulate important developmental processes that may significantly improve the quality of Croatian education. Pursuant to the Primary and Secondary School Education Act (OG 87/08, 86/09; 92/10; 105/10, 90/11, 5/12, 16/12), secondary education for gymnasium programmes is completed upon passing the *State Matura* exam. According to the Act, students having spent four years at vocational and art schools also have the option of taking the *State Matura* exam, as do adult learners. Provisions for taking the *State Matura* exam apply to pupils who had enrolled in the first year of a Gymnasium or four-year vocational or art school in the 2006/2007 school year.

General education in secondary schools (Gymnasium):

There are 180 secondary schools that carry out general education programmes (138 public, 26 private, 16 religious).

Table 2.3: General education in secondary schools (Gymnasium)

Entry requirements:	Primary school certificate of completion of 7th and 8th grade (8 years of compulsory primary school), health and psychological conditions prescribed by curricula and intersectoral legislation if necessary
Education and training:	Lasts for four years. Programme providers are private and public secondary schools, as well as schools of religious communities.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects
Expected learning outcomes:	Defined in the National Curriculum Framework for Preschool, General Compulsory and Secondary School Education, and gymnasium programmes
Assessment and awards:	Schools providing education and training also perform an assessment. The assessment is internal and continuous, alongside final exams which are external (State Matura). Students are examined on 3 obligatory subjects (Croatian, Foreign Language and Mathematics) and maximum 6 optional subjects. Assessors at schools are teachers and expert assistants. Upon completion of general secondary education programmes students as well as adult participants are awarded a certificate of completion (*svjedodžba o državnoj maturi*).
Progression routes:	Students holding this certificate of completion (*svjedodžba o državnoj maturi)* usually apply to higher education programmes (more than 90 %).
Labour market:	Students holding a certificate of completion (*svjedodžba o državnoj maturi)* can enter the labour market.
Quality assurance:	Schools are established by local/regional self-government and by private bodies according to criteria set by the Ministry of Science, Education and Sports. Education, assessment and awards are ensured by internal and external quality assurance systems (MSES, ETTA, NCEEE).

Example:	*Maturant prirodoslovne gimnazije* Entry requirements: 8-year primary school, primary school certificate of completion of 7th and 8th grade Education and training: Lasts for 4 years. Providers in Croatia are public and private secondary schools and adult education institutions (but not grammar schools in natural sciences) Assessment and awards: The assessment is internal and continuous, alongside final exams which are external (State Matura). Upon completion of a general secondary education programme (Prirodoslovna gimnazija), students as well as adult participants are awarded a certificate of completion (*svjedodžba o državnoj maturi*) and the title *maturant prirodoslovne gimnazije.* Routes of progression after gymnasium: Nearly all students holding this certificate of completion (*svjedodžba o državnoj maturi)* apply to university programmes. Labour market: These students do not usually enter the labour market. Quality assurance: MSES, ETTA, NCEEE.

Art Schools

There has been a long tradition of education and training in Croatia provided by schools for the arts. There are 90 music and dance schools at levels 1 through 4 of the CROQF (primary and secondary education), and 12 schools of visual arts and design at level 4 of the CROQF (secondary education).

Table 2.4: Art schools

Entry requirements:	For schools of music at the level of primary education: age 7; For schools of dance at the level of primary education: age 9; For schools of music and dance at the level of secondary education: • Primary art school certificate, or • 1-year preparatory programme for secondary schools of dance / 2-year preparatory programme for secondary schools of music. • passing the entry exam For schools of visual arts and design: • Primary school certificate of completion of 7th and 8th grade (8 years of compulsory primary school) • Proven talent for artistic expression • For the preparatory programme for secondary schools of music: age 15 • For the preparatory programme for secondary schools of dance: age 17.
Education and training:	Art schools include programmes in dance, music, visual arts, theatre etc. The dance programme (primary school) lasts four years.

	The music programme (primary school) lasts six years. Programmes in art schools at the secondary level last four years. Providers are private and public schools/institutions.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects
Expected learning outcomes:	Defined in the National Curriculum Framework for Preschool, General Compulsory and Secondary School Education, and gymnasium programmes
Assessment and awards:	Schools providing education and training also perform assessments. Assessment is internal and continuous, alongside final exams. Assessors at the schools are teachers and expert assistants.
Progression routes:	Students holding this certificate of completion (*svjedodžba o završnome radu*) and certificates on the passed State Matura exams (*potvrda o položenim ispitima državne mature*) apply to higher education programmes
Labour market:	Students holding this certificate of completion may enter the labour market.
Quality assurance:	Education, assessment and awards are ensured by internal and external quality assurance systems (MSES, ETTA, NCEEE).
Example:	*Glazbenik teoretičar* Entry requirements: 6-year primary music school certificate of completion of 6th grade (*svjedodžba o završenom šestom razredu*) or 2-year preparatory programme certificate (*svjedodžba o završenom drugom pripremnom razredu)* and passed entrance exame. Education and training: Lasts for 4 years. Providers in Croatia are public and private secondary schools. Assessment and awards: Schools providing education also perform assessments. Assessment is internal and continuous, alongside final exams. Pupils may also take the State Matura exam if they wish so, which are external. Upon completion of a music programme, students are awarded a certificate of completion (*svjedodžba o završenom srednjem glazbenom obrazovanju za zanimanje glazbenik teoretičar*) and the title *glazbenik teoretičar*. Pupils may also take the State Matura exam, and may be awarded a certificate on the passed State Matura exams (*potvrda o položenim ispitima državne mature*).

Vocational education and training

According to the Development Strategy for Vocational Education System in the Republic of Croatia 2008–2013, the vocational education and training system serves to develop vocational and key competencies related to specific types of programmes within the concept of lifelong learning, and is relevant for achieving sustainable employment to meet the needs of a modern, competitive and flexible labour market or to prepare individuals for further

education. These goals also impose the need for different approaches to learning, different methods and procedures within the teaching process and new teacher competencies.

VET schools in Croatia are classified by the type of programmes they provide as: *technical, industrial, trade and crafts.* The current system of VET in Croatia covers cca 70% of the total secondary school population, in 359 schools.

The system of regular initial vocational education and training (IVET) is comprised of:

- *one-year and two-year programmes* for acquiring competencies through cca 23 education programmes. The number of pupils who attend such programmes comprises cca 2% of the total number of pupils in vocational education;
- *three-year programmes* for acquiring competencies for industry, trades and crafts in cca 93 education programmes. Attended by cca 31.% of the total number of pupils in vocational education;
- *four-year programmes (and five-year programmes for nursing technicians)* for the acquisition of competencies through cca 83 education programmes. Attended by cca 67 % of the total number of pupils in vocational education.

All programmes related to secondary education can be also provided as adult education and training programmes (Adult Education Act, OG 17/07).

The Government of the Republic of Croatia adopted the Development Strategy for Vocational Education System in the Republic of Croatia 2008 – 2013 in July 2008. The Strategy is aimed at modernisation and reform of the VET system based on principles of *availability, relevance, quality assurance and transparency.* VET system reform was backed by the Vocational Education and Training Act (OG 30/09), according to which the objectives of the VET are to enable participants the acquisition of key and vocational competencies, to obtain qualifications necessary for the labour market, for further education and lifelong learning, for personal development as well as for the economic and general development of society, to secure international compatibility of obtained vocational qualifications, and to secure the development of open curricula. Furthermore, one of the responsibilities of the AVETAE, according to the VET Act, is adequate competence and permanent training of teachers in a contemporary approach to the educational process.

Role of the VET Council and Sector councils (Vocational Education and Training Act (OG 30/09))**:**

The VET Council has 17 members who are representatives of all stakeholders in the VET area, appointed by the Minister of Education. Their role is to propose educational sectors, coordinate activities, provide initiatives for delivering new or changing existing curricula, propose measures, activities and strategies for VET development, and to perform other activities in compliance with the Decision on Appointment. Sector Councils are established in partnership as advisory and expert bodies that express the needs of the labour market, higher education and all other components of Croatian society through: defining necessary VET qualifications, analysing current and necessary competencies within sectors and sub-sectors, presenting opinions to the Agency regarding the necessary content of VET qualifications, developing content for parts of VET qualifications standards, promoting the sector and potential employment within the sector, issuing proposals for the network of

curricula and VET institutions to the founders of VET institutions, and establishing profiles within each educational sector.

Education and training programmes provided by the VET schools include both general education, i.e. the attainment of key competencies, and vocational education and training, approved by the MSES or in partnership with the ministry responsible for entrepreneurship and crafts.

Table 2.5: One-year vocational education and training programmes

Entry requirements:	Primary school certificate of completion of 7th and 8th (8 years of compulsory primary school), health and psychological conditions prescribed by curricula according to the law.
Education and training:	There are 6 VET *one-year programmes* for the following qualifications*: radnik u slastičarnici, radnik u kuhinji, rukovatelj viličarom, rukovatelj brodskom dizalicom, lučki transportni radnik, građevinski radnik*. Programme providers are public and private VET schools/institutions and adult education institutions.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects and specialists with teaching competences.
Expected learning outcomes:	According to the VET Act, curricula should be based on learning outcomes, although the learning outcomes approach is still is not fully functional. VET curricula based on learning outcomes are in process of development.
Assessment and awards:	Schools providing education and training also perform assessments. Assessors are school teachers and expert assistants, and assessment is provided continuously throughout the duration of the relevant programme. Upon completion of VET programmes, students are awarded a certificate of completion.
Progression routes:	Students holding this certificate can apply for *majstorski ispit* (after 10 years of working experience) by the Chamber of Trades and Crafts.
Labour market:	Students holding this certificate enter the labour market meeting requirements to execute simple tasks in familiar conditions.
Quality assurance:	Schools are established by local/regional self-governing units according to the criteria set forth by the Ministry of Science, Education and Sports and by private bodies. VET programmes are approved by the Ministry of Science, Education and Sports, consisting of a vocational part developed by the AVETAE and a general part developed by the ETTA. Education, assessment and awards are ensured by internal and external evaluation systems. According to the VET Act, VET institutions are obliged to conduct self-evaluation and external evaluation. Self-evaluation is conducted for the following relevant fields: planning and programming of the work, teaching and support to learning, participants' accomplishments, material conditions and human resources, professional development of the staff, human relations in VET institutions, administration and management, and cooperation with other stakeholders. Self-evaluation of the VET institution is monitored and evaluated by the Committee for Quality which is nominated by the managing body of the VET institution. Ways and procedures for election of members to the Committee for Quality are

	determined by the statute of the VET institution. External evaluation is conducted by the NCEEE.
Example:	There are 6 VET *one-year programmes* for following qualifications: *radnik u slastičarnici, radnik u kuhinji, rukovatelj viličarom, rukovatelj brodskom dizalicom, lučki transportni radnik, građevinski radnik*.

Table 2.6: Two-year vocational education and training programmes

Entry requirements:	Primary school certificate of completion of 7th and 8th grade (8 years of compulsory primary school), health and psychological conditions prescribed by curricula according to the law.
Education and training:	There are 43 VET two-year programmes. Providers of the programmes are public and private VET schools /institutions /organisations and adult education institutions /organisations.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects and specialists with teaching competences
Expected learning outcomes:	Every curriculum has defined tasks which describe the knowledge and skills students should acquire according to the relevant curriculum. According to the VET Act, curricula should be based on learning outcomes, although the learning outcomes approach still is not fully functional. VET curricula based on learning outcomes are in process of development; this process is also partially financed by EU funds.
Assessment and awards:	Schools providing education and training also perform assessments. Assessors are school teachers and expert assistants, assessment is provided continuously throughout the duration of the relevant programme. Upon completion of VET programmes, students are awarded a certificate of completion.
Progression routes:	Students holding this certificate can apply for *majstorski ispit* (after 10 years of working experience) by the Chamber of Trades and Crafts .
Labour market:	Students holding this certificate enter the labour market meeting requirements to execute simple tasks in familiar conditions.
Quality assurance:	Schools are established by local/regional self-government according to criteria set forth by the Ministry of Science, Education and Sports and by private bodies. VET programmes are prescribed by the Ministry of Science, Education and Sports, consisting of a vocational part developed by the AVETAE and a general part developed by the ETTA. Education, assessment and awards are ensured by internal and external evaluation systems. According to the VET Act, VET institutions are obliged to conduct self-evaluation and external evaluation. Self-evaluation is conducted for the following relevant fields: planning and programming of the work, teaching and support to learning, participants' accomplishments, material conditions and human resources, professional development of the staff, human relations in VET institutions, administration and management, and cooperation with other stakeholders. Self-evaluation of the VET institution is monitored and evaluated by the Committee for Quality which is nominated by the managing body of the VET institution. Ways and procedures for election of members to the Committee for Quality are determined by the statute of the VET institution. External evaluation is conducted by the NCEEE.
Example:	*Cestar*

	Entry requirements: 8-year primary school, primary school certificate of completion of 7th and 8th grade Education and training: Lasts for 2 years. Providers in Croatia are public and private VET schools and adult education institutions. Assessment and awards: Upon completion of the VET programme (*Srednja prometna škola*), students as well as adult participants are awarded a certificate of completion and the title *cestar.*

Table 2.7: Three-year vocational education and training programmes

Entry requirements:	Primary school certificate of completion of 7th and 8th grade (8 years of compulsory primary school), health and psychological conditions prescribed by curricula according to the law. An additional condition before beginning education for crafts occupations is a signed contract on apprenticeship.
Education and training:	VET programmes last three years. Providers of the programmes are public and private VET schools and adult education institutions.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects and specialists with teaching competences.
Expected learning outcomes:	Every curriculum has defined tasks which describe the knowledge and skills students should acquire according to the relevant curriculum. According to the VET Act, curricula should be based on learning outcomes, although the learning outcomes approach still is not fully functional. Generally, executing a set of simple tasks in familiar conditions at work or study.
Assessment and awards:	Schools providing education and training also perform assessments. Assessments are internal, continuous and final. For programmes/qualifications in crafts a commission for part of final assessment (*pomoćnički ispit*) is appointed by the Croatian Chamber of Trades and Crafts. Assessors are school teachers, expert assistants and teachers in enterprises, Assessment is provided continuously throughout the duration of the relevant programme. Upon completion of VET programmes and successful completion of the final exam, students are awarded a certificate of completion.
Progression routes:	Students holding this certificate can apply for *majstorski ispit* (after 2 years of working experience if they have the certificate in crafts, and 3 if they have the certificate in other three years programmes) by the Chamber of Trades and Crafts,
Labour market:	Students holding this certificate enter the labour market meeting requirements to execute simple tasks in changeable conditions.
Quality assurance:	Schools are established by local/regional self-government according to criteria set forth by the Ministry of Science, Education and Sports and by private bodies. VET programmes are prescribed by the Ministry of Science, Education and Sports,

	consisting of a vocational part developed by AVETAE and a general part developed by ETTA. Education, assessment and awards are ensured by internal and external evaluation systems. According to the VET Act, VET institutions are obliged to conduct self-evaluation and external evaluation. Self-evaluation is conducted for the following relevant fields: planning and programming of the work, teaching and support to learning, participants' accomplishments, material conditions and human resources, professional development of the staff, human relations in VET institutions, administration and management, and cooperation with other stakeholders. Self-evaluation of the VET institution is monitored and evaluates by the Committee for Quality which is nominated by the managing body of the VET institution. Ways and procedures for election of members to the Committee for Quality are determined by the statute of the VET institution. External evaluation is conducted by the National Centre for External Evaluation of Education. Education curricula for crafts occupations are under dual jurisdiction of two ministries: the Ministry of Science, Education and Sports and the Ministry of Entrepreneurship and Crafts. The Croatian Chamber of Trades and Crafts is responsible for delivering the mentioned curricula, together with the two ministries. Education, assessment and awards are ensured by internal and external assurance systems.
Example:	*Vozač motornog vozila* Entry requirements: 8-year primary schools, primary school certificate of completion of 7th and 8th grade Education and training: Lasts for 3 years. Providers in Croatia are public and private VET schools and adult education institutions. Assessment and awards: Providers also perform assessments. Assessment is internal, continuous and final. Upon completion of the VET programme (*Srednja prometna škola*), students as well as adult participants are awarded a certificate of completion and the title *vozač motornog vozila.*

Table 2.8: Four-year (and 5-year for health sector programmes) vocational education and training programmes

Entry requirements:	Primary school certificate of completion of 7th and 8th (8 years of compulsory primary school), health and psychological conditions prescribed by curricula according to the law
Education and training:	Providers of these programmes are public and private VET schools and adult education institutions.
Expected	Every curriculum has defined tasks which describe the knowledge and skills

learning outcomes:	students should acquire according to the relevant curriculum. According to the VET Act, curricula should be based on learning outcomes, although the learning outcomes approach still is not fully functional. VET curricula based on learning outcomes are in process of development.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects
Assessment and awards:	Schools providing education and training also perform assessments. Assessment is internal, continuous and final. Assessors at the schools are teachers and expert assistants. Upon completion of VET programmes and after successful completion of the final exam, students are awarded a certificate of completion (*svjedodžba o izradbi i obrani završnoga rada*). Students having spent four years (or 5 years for regulated professions) at vocational schools also have the option of taking the *State Matura* exam, which is an external assessment.
Progression routes:	Students holding this certificate as well as a certificate on the passed State Matura exams (*potvrda o položenim ispitima državne mature)* can apply to higher education.
Labour market:	Students holding this certificate enter the labour market meeting requirements to execute simple tasks in changeable conditions.
Quality assurance:	Schools are established by local/regional self-government according to criteria set forth by the Ministry of Science, Education and Sports and by private bodies. VET programmes are prescribed by the Ministry of Science, Education and Sports, consisting of a vocational part developed by the AVETAE and a general part developed by the ETTA. Education, assessment and awards are ensured by internal and external quality assurance systems. According to the VET Act, VET institutions are obliged to conduct self-evaluation and external evaluation. Self-evaluation is conducted for the following relevant fields: planning and programming of the work, teaching and support to learning, participants' accomplishments, material conditions and human resources, professional development of the staff, human relations in VET institutions, administration and management, and cooperation with other stakeholders. Self-evaluation of the VET institution is monitored and evaluated by the Committee for Quality which is nominated by the managing body of the VET institution. Ways and procedures for the election of members to the Committee for Quality are determined by the statute of the VET institution. External evaluation is conducted by the National Centre for External Evaluation of Education. The National Centre for the External Evaluation of Education (NCEEE) has been entrusted with the preparation of National Exams and the *State Matura* as a permanent system of external evaluation of work and achievement.
Example 1:	*Tehničar za mehatroniku* Entry requirements: 8-year primary school, primary school certificate of completion of 7th and 8th grade Education and training:

	Lasts for 4 years. Providers in Croatia are public and private VET schools and adult education institutions. Assessment and awards: Providers also perform an assessment. The assessment is internal, continuous and final. Students may also apply for external assessment (State Matura exam). Upon completion of this programme (*Elektrotehnička škola*), students as well as adult participants are awarded a certificate of completion and/or certificate on the passed State Matura exams (*potvrda o položenim ispitima državne mature*) and the title *tehničar za mehatroniku.*
Example 2:	*Medicinska sestra/medicinski tehničar opće njege* Entry requirements: 8-year primary schools, certificate of completion of primary school Education and training: Lasts for 5 years. Providers in Croatia are public and private VET schools. Assessment and awards: Providers also perform assessments. The assessment is internal and continuous, alongside a final exam which may be external (State Matura). Upon completion of VET programmes (*Srednja medicinska škola*), students are awarded a certificate of completion and/or certificate on the passed State Matura exams (*potvrda o položenim ispitima državne mature*) and the title *medicinska sestra.* Progression routes: Students holding this certificate and certificate on the passed State Matura exams (*potvrda o položenim ispitima državne mature)* can continue their education in the higher education institutions.

Adult Education

Adult education in Croatia has a long tradition of establishing numerous institutions to provide services for the education and training of adult citizens. Now it is becoming a process of adult education and learning for the purpose of exercising the right to unrestrained development of personality, training for employability (earning qualifications for a first-time career, professional retraining, acquiring and expanding vocational knowledge, skills and abilities), and enabling civic participation. Adult education in Croatia encompasses education for persons above 15 years of age. As stipulated by the Adult education Act (OG 17/07), adult education is based on the following principles: lifelong learning; rational use of educational opportunities, proximity and accessibility to education for all with equal conditions, in accordance with different individuals' abilities; liberty and autonomy in choices of style, content, form, resources and methodology; respect for diversity and inclusion; professional and moral responsibility of teachers, trainers and other

employees working in the field of education; guarantee of the quality of educational choices; respect for the personality and dignity of each participant.

Croatian adult learning as a part of the overall educational system has made considerable progress since the adoption of the Strategy, and in 2006, the first law was brought regulating the sector. A major impetus has been provided by the EC CARDS 2004 Adult Learning Project implemented between 2007 and 2009.

Many of the basic elements of a system of adult learning in Croatia are in place. However, the system is traditionally provider-driven, with the MSES and its Agency for Vocational Education and Training and Adult Education ensuring monitoring over providers and programmes for formal adult education. This may form an obstacle to providers becoming more flexible and responsive to the needs of both individuals and businesses, which call for targeted and quick responses. The focus of the MSES's current funding is recuperative, basic education for unqualified or poorly-qualified adults, although in the future secondary and post-secondary qualifications upgrade courses may be financed or co-financed, with the help of the European Social Fund, to satisfy the needs of a growing number of adult learners. Employers are to become important continuing training outlets, alongside other providers.

Legislation and other documents related to adult education:

- Adult Education Act (OG 17/07);
- Primary and Secondary School Education Act (OG 87/08, 86/09, 92/10, 105/10, 90/11, 5/12, 16/12);
- Vocational Education and Training Act (OG 30/09);
- Ordinance on Public Certificates in Adult Education (OG 129/08, 50/10);
- Ordinance on Standards and Specifications in Adult Education Institutions (OG 129/08, 52/10);
- Ordinance on the Contents, Form and Method of Keeping Andragogical Documentation (OG 129/08);
- Ordinance on Records in Adult Education Institutions (OG 129/08);
- Strategy for Adult Education by the Croatian Government (November 2004).

Main governing bodies:

The Ministry of Science, Education and Sports (MSES) is the policy level body responsible for planning, funding and monitoring the overall education system.

Training institutions have to undergo an accreditation procedure with the MSES and submit any new programme for approval to the authorities in order to be able to issue a formal certificate at the end of the course.

The Agency for Adult Education was established by a Government Decree in May 2006 and with the enactment of the Adult Education Act in February 2007. The Adult Education Act has established a normative framework and created legal prerequisites for the further development of adult education as an integral part of Croatian education. The basic activities of the Agency are the development, monitoring, evaluation and advancement of adult

education. The Agency merged with the Agency for Vocational Education in February 2010 by adoption of the Act on Agency for Vocational Education and Training and Adult Education.

2.1.4. Postsecondary Professional Education and Training

Postsecondary adult education programmes lead to additional competencies compared to ones previously acquired, but are not university education[3]. As opposed to training programmes, a condition for **enrolment in additional training programmes** is *the previously acquired expert knowledge of the area in which participants wants to be additionally trained.* Upon the completion of these programmes, participants who finished secondary school *improve and extend previously acquired professional knowledge* to meet labour market demands and to gain knowledge of new techniques and technologies, as well as of their use. The programme for the Master Craftsman Exam is regulated by the Ministry of Entrepreneurship and Crafts and approved by the Croatian Chamber of Trades and Crafts.

Table 2.9: Postsecondary professional education and training

Entry requirements:	An appropriate vocational education and training programme (the same profile), and at least 2 years of experience in the profession in which the candidate wants to take *majstorski ispit* (the Master Craftsman Exam); or An inappropriate vocational education and training programme (different profile), and at least 3 years of experience in the profession in which the candidate wants to take the Master Craftsman Exam; or Appropriate 1 or 2 years of a vocational education and training programme, and at least ten years of experience in the profession in which the candidate wants to take the master craftsman exam.
Education and training:	Preparation for *majstorski ispit* (the Master Craftsman Exam) is not compulsory, but can be organized by institutions for adult education and other entities. Master craftsman schools are not part of formal education and can be established under provision of the Act on Trades and Crafts.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualifications in different subjects and/or Master Craftsman Exam as well as other specialists in different areas
Expected learning outcomes:	To perform work at a high professional level, to manage an independent company, to employ all legislation defining an activity within a craft sector, to ensure quality, to know the technologies related to higher levels of productivity, to organize one's own work processes and the work of others, to transfer practical and professional knowledge and skills to apprentices, to produce a business plan and analyze business results, to ensure a creative working atmosphere, to motivate and develop co-workers, and to ensure safety at work.
Assessment and awards:	*Majstorski ispit* (the Master Craftsman Exam) is offered by a committee of the Croatian Chamber of Trades and Crafts consisting of five persons. Two persons are master craftsmen in the related craft, one examiner is an expert in professional theory, one examiner is an expert in legislation and business-management, and one examiner is an expert in skills related to the education of apprentices.

[3] For example, Additional Training Programmes (*Programi usavršavanja*) as defined by the Ordinance on Standards and Specifications in Adult Education Institutions (OG 129/08, 52/10)

Progression routes:	NA
Labour market:	Passing the Master Craftsman Exam is a precondition for running businesses regulated by special Act (OG 42/08).
Quality assurance:	The programme for the Master Craftsman Exam is regulated by the Ministry of Entrepreneurship and Crafts and approved by the Croatian Chamber of Trades and Crafts. The exam is held by five member committee. The procedure of the exam is regulated by an Act delivered by the Minister responsible for entrepreneurship and crafts and approved by the Croatian Chamber of Trades and Crafts. The Croatian Chamber of Trades and Crafts has prepared catalogues for the standardization of exams. The catalogues precisely describe the learning outcomes for each master profile.
Example:	*Plinoinstalater* The Master Craftsman Exam consists of 4 parts: a practical part, a professional-theoretical part necessary for crafts businesses, a business-management and legislative part, and a pedagogical part related to the education of apprentices. If a candidate does not pass the practical part of the exam he/she is not allowed to perform other sections until the next exam. A candidate who has passed the Master Craftsman Exam is awarded a diploma of the master craftsman profession and title of *majstor plinoinstalater* (Master gas installer). Labour market: *Majstor plinoinstalater* may run his/her own gas workshop, employ other workers, and educate apprentices attending an education and training programme for gas installers.

2.1.5. Higher Education

Croatian higher education has in recent years taken active part in the European higher education area reforms. Croatia signed the Bologna Declaration in 2001, thus affirming its obligation to reform the national system of higher education in accordance with the Declaration's requirements. The Act on Scientific Activity and Higher Education of 2003 enabled the reform of the Croatian higher education system and increased the level of university autonomy. All study programmes were restructured in accordance with the principles of Bologna Process introducing 3 main study cycles, transfer of ECTS and diploma supplement. In the 2005/2006 academic year reformed study programmes were introduced and students could no longer enrol in pre-Bologna programmes. Since 2006, Croatia has actively participated in the European Union Open Method of Coordination working arrangements.

The Croatian higher education system supports the professional education offered in polytechnics (*veleučilišta*), colleges or schools of professional higher education (*visoke škole*), and universities (*sveučilišta*).

Educational requirements for admission into study programmes are set by higher education institutions. In the past the admissions process to first cycle programmes at Croatian

universities required students to present their secondary school grades and take an entrance examination. Since 2010, instead of individual entrance exams, Croatian universities use the new national examinations administered at the end of secondary school (State Matura). The National Information System for Administration of Admissions Applications in Higher Education became the central service for administering the State Matura as part of the process of enrolment into higher education in Croatia.

The process of alignment of the Croatian higher education system with the European Higher Education Area has placed emphasis on external and internal quality assurance. In the light of this, the Act on Quality Assurance in Science and Higher Education was enacted in April 2009, tasking the Agency for Science and Higher Education with external quality assurance processes in Croatia. The Act also gave autonomy to public universities for self-accreditation of new study programmes. Public universities apply for public financing of newly accredited programmes at the ASHE. If positively evaluated for public financing, study programmes are registered on the MSES Register of Programmes.

Main governing bodies:

The Ministry of Science, Education and Sports (MSES) is the national authority responsible for planning, funding and monitoring of the overall education system. The MSES provides administrative and other activities relating to: the higher education system, securing financial and material conditions for work, all issues related to student welfare, and the legal supervision of higher education institutions. The National Council for Higher Education[4] is an expert and advisory body of the Croatian Parliament responsible for the strategic development and quality of higher education in the Republic of Croatia. The Rectors' Conference includes all public university rectors and decides on issues of common interest for the development of universities. The Council of Polytechnics and Colleges consists of the deans of all polytechnics and colleges. The Council decides on issues of common interest for the development of polytechnics and colleges. The Agency for Science and Higher Education is an independent national body responsible for assessment of scientific activities and quality assurance in higher education, recognition of diplomas and qualifications through the ENIC/NARIC, and since 2009, for collecting information on Croatian higher education and science, providing support for the implementation of the State Matura (*Državna matura*) – national exams for graduates from secondary schools, and the administration of centralised applications and admissions to higher education. The Agency for Mobility and EU Programmes, the National Agency for Lifelong Learning Programme and the Youth in Action Programme provide support for ECTS coordinators at higher education institutions.

Legislation in the field of higher education:

Croatian higher education is primarily regulated by the Act on Scientific Activity and Higher Education (OG 123/03, 198/03, 105/04, 174/04, 02/07, 46/07, 45/09, 63/11, 94/13, 139/13) which provided the framework for the implementation of the Bologna process and modernisation of the organisational scheme in science and higher education. The Act treats equally private and public higher education institutions of the same kind.

[4] Till the establishment of the National Council for Science, Higher Education and Technological Development.

The Act on Academic and Professional Titles and Academic Degrees or Qualifications (OG 07/07) was passed in September 2007 and established an overarching system of titles for students graduating from Bologna study programmes, as well as provided a framework for comparison of pre-Bologna and Bologna titles. Following the publication of the list of all new academic and professional qualifications by the Rectors' Council, higher education institutions have sett up rules and procedures for this comparison process.

The Act on Student Council and Other Student Organizations (OG 71/07) was passed in July 2007, reforming the system of student representation in Croatia. It allowed stronger student oversight of the functioning of their representatives and introduced an obligatory student ombudsman to all higher education institutions.

The 2009 Act on Quality Assurance in Higher Education and Science (OG 45/09) enabled complete autonomy of the Agency for Science and Higher Education in the external quality assurance processes in Croatia. It also gave autonomy to public universities to freely establish new programmes. In February 2010, a new Ordinance was passed on the Content of Accreditation and the Conditions for Issuing of Accreditation for Higher Education, Delivery of Study Programmes and Reaccreditation of Higher Education Institutions. The Ordinance also forms the basis for the development of policies for the recognition of prior learning and flexible learning paths.

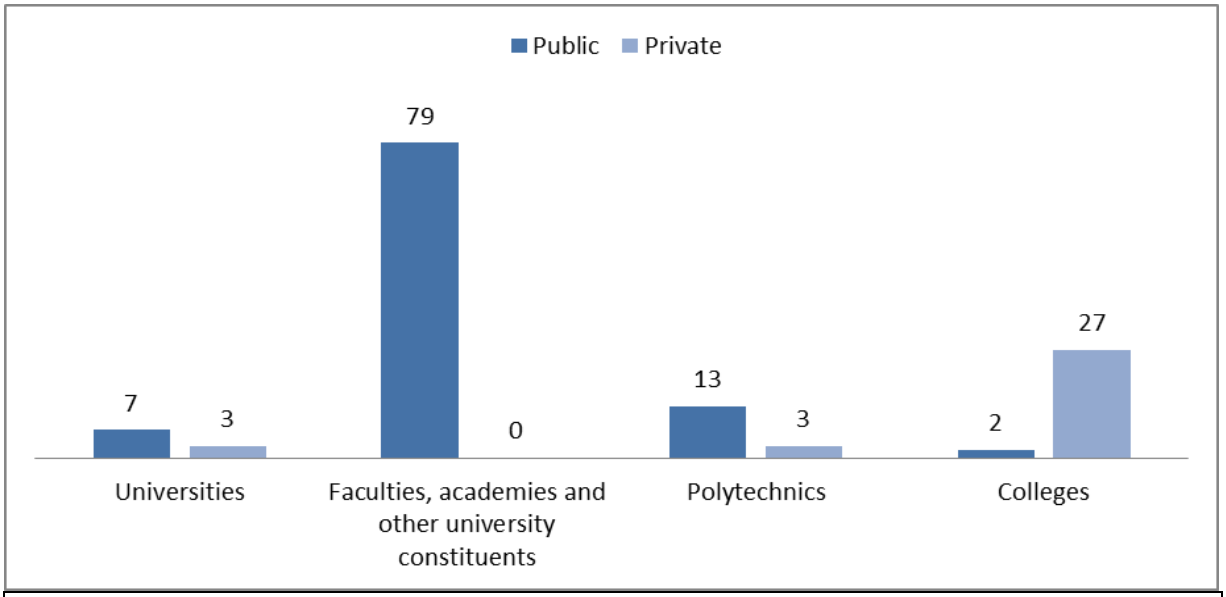

Figure 2.3: Number of universities, polytechnics and colleges in the Republic of Croatia (source: MSES, February 2012)

The Agency for Science and Higher Education has been a member of INQAHAE (International Network for Quality Assurance Agencies in Higher Education) since November 2006. In April 2008, the ASHE became a full member of CEENQA (Network of Central and Eastern European Quality Assurance Agencies in Higher Education). In the same year, the ASHE joined the Organization for Economic Cooperation and Development – OECD IMHE (Institutional management in Higher Education) forum. In December 2007 Agency for Science and Higher Education was granted an associate status within ENQA (European Association for Quality

Assurance in Higher Education). In October 2011 the ASHE gained full ENQA (European Association for Quality Assurance in Higher Education) membership, and in November of this year it was included on the European Quality Assurance Register for Higher Education (EQAR).

Also in October 2011, Croatian Parliament adopted the strategic document the Higher Education Institutions and Study Programmes Network in accordance with the provisions of the Act on Quality Assurance in Science and Higher Education. This document sets out qualitative criteria that should serve as a basis for future assessments of justifiability /feasibility of establishing new higher educations and study programmes.

The Act on Regulated Professions and the Recognition of Foreign Professional Qualifications was passed at the end of 2009 in order to align the requirements for education and recognition in regulated professions with Directive 2005/36/EC (OG 124/09, 45/11).

Recognition of foreign higher education qualifications is regulated by the Act on Recognition of Foreign Educational Qualifications (OG 158/2003, 198/2003, 138/2006, 45/11). According to this Act procedures for academic recognition are placed under the jurisdiction of higher education institutions, while professional recognition is under the authority of the Croatian ENIC/NARIC office within ASHE.

Types of higher education institutions:

Higher education institutions in the Republic of Croatia are universities (along with their constituents – faculties, academies and other legal entities), polytechnics and colleges (Figure 2.3). Universities (*sveučilišta*) are higher education institutions which deliver university study programmes in at least two scientific and/or artistic areas in a greater number of fields. Universities may also deliver professional study programmes. Universities may have constituent higher education institutions which are legal entities and are called faculties (*fakulteti*) or art academies (*umjetničke akademije*). Universities and their constituents deliver study programmes and conduct scientific research and other professional and artistic activities.

Polytechnics (*veleučilišta*) and colleges (*visoke škole*) are higher education institutions which deliver professional study programmes. These two institutions differ in the scope of the programmes they offer: polytechnics are those schools of professional higher education which deliver professional study programmes in three or more scientific fields. Their mission is to offer application-oriented programmes which are professional in character and which often include practical work experience in the general area of study. Due to the continuous work towards polycentric development of higher education in the past decade, the total number of professional higher education institutions has increased to 16 polytechnics and 29 colleges.

Both of these types of higher education institutions can organise and conduct professional study programmes and issue first and second cycle degrees (universities can issue academic and professional degrees, other higher education institutions only professional degrees), but only universities can implement third cycle education.

Public higher education institutions are those established by the state. Private universities, polytechnics and colleges are established by founders in the manner prescribed by the law and regulations related to the establishment of institutions. Counties, towns and municipalities may establish schools of professional higher education by decisions of their representative bodies. All higher education institutions in Croatia are non-profit institutions and provide their duties as a public service.

Currently there are 136 higher education institutions in Croatia, respectively: 7 public universities, 3 private universities, 79 faculties, academies and other constituents, 3 private polytechnics, 13 public polytechnics, 27 private colleges and 2 public colleges. The large number of higher education institutions is mostly due to the fact that the four largest universities (Zagreb, Rijeka, Osijek and Split) are not integrated and their constituents (faculties, academies, centres etc.) are legal entities.

The universities in Zagreb, Split, Osijek and Rijeka are mainly composed of smaller constituents - faculties, which are legal entities. Universities in Zadar, Dubrovnik and Pula as well as the International University in Dubrovnik, the Croatian Catholic University in Zagreb and the Media University in Split are composed of departments, which are not legal entities.

Types of higher education programmes and qualifications:

Higher education in the Republic of Croatia is delivered within university and professional study programmes (Figure 2.4).

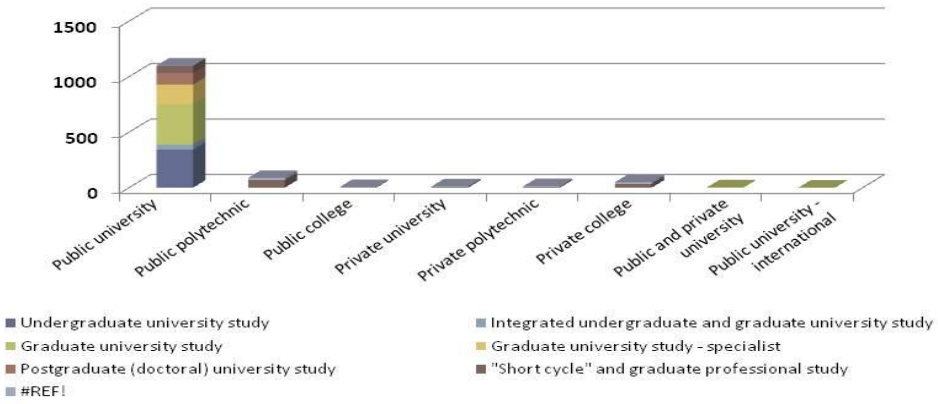

Figure 2.4: Number and type of study programmes by HEI type (source: ASHE, March 2010).

University study programmes qualify students to work in science and higher education, private and public sectors, and society in general, as well as to develop and apply scientific and professional knowledge. Professional study programmes provide students with an appropriate level of knowledge and skills required to work in applied professions, as well as direct integration into the working process.

University study programmes include undergraduate, graduate and postgraduate university programmes. Professional study programmes include professional (undergraduate) and specialist professional graduate studies.

According to the Central Bureau of Statistics, in the 2010/2011 academic year, there were 148,616 students enrolled on undergraduate and graduate programmes following regular first and second cycle courses in Croatia and an additional 23,635 students who had taken all their courses but had not yet passed all their programme examinations. Also, 1,762 students enrolled on graduate university study – specialist programmes and 3,350 students enrolled on postgraduate university programmes.

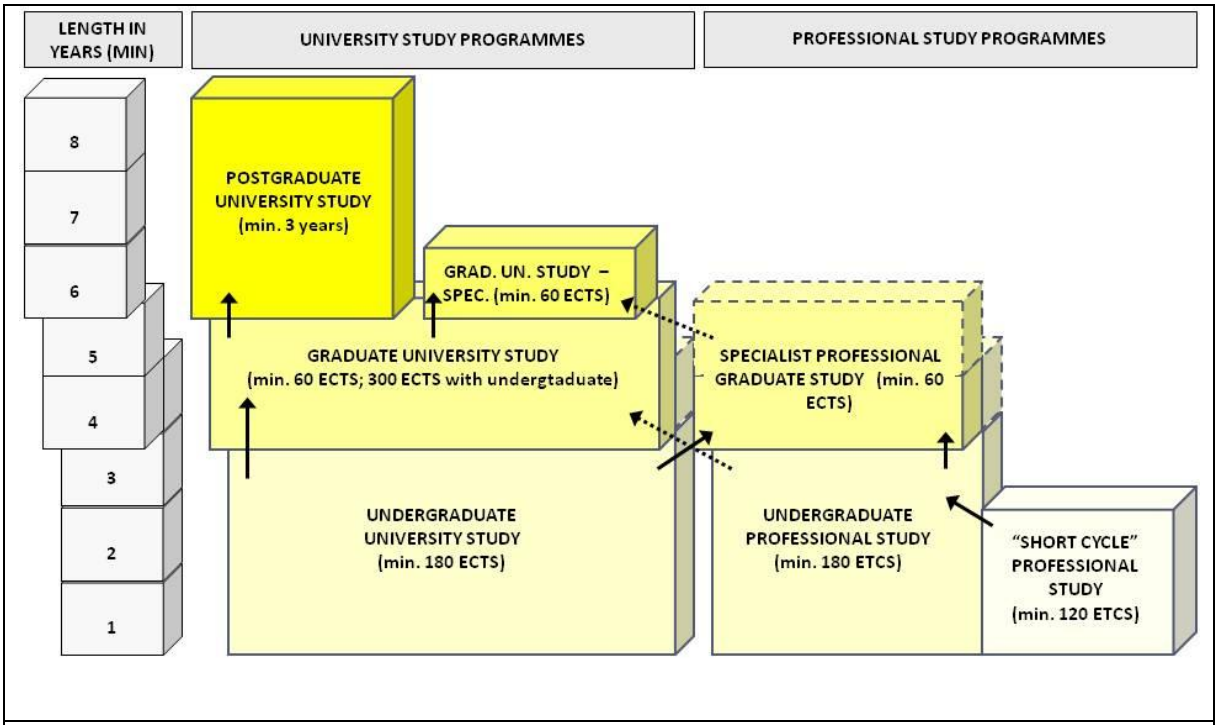

Figure 2.5: Types of study programmes at HEIs in Croatia (source: ASHE, 2010).

Table 2.10: Number and type of study programmes, by HEI type (source: ASHE, 2010).

Study programme type	Public university	Public polytechnic	Public college	Private university	Private polytechnic	Private college	Public and private university	Public university - international cooperation	TOTAL
Undergraduate university study programmes	343			8					351
Integrated undergraduate and graduate university study programmes	45								45
Graduate university study	364			3			2	1	370

programmes									
Graduate university study programmes – specialist	178								178
Postgraduate university (doctoral) study programmes	103								103
Professional study ("short cycle" and undergraduate) programmes	65	68	3	1	7	34			178
Specialist professional graduate programmes	2	20	3		6	16			47
TOTAL	**1100**	**88**	**6**	**12**	**13**	**50**	**2**	**1**	**1272**

Organization of university study programmes:

Undergraduate university programmes – first cycle programmes (*preddiplomski sveučilišni studij*) - normally last for three years in which students accumulate 180 ECTS. A minority of undergraduate university programmes in Croatia are delivered as four year programmes in which students accumulate 240 ECTS credits. Upon completion students are awarded a document called *svjedodžba* and the academic title of *sveučilišni prvostupnik* or *sveučilišna prvostupnica (baccalaureus / baccalaurea)* with reference to a specialisation. Students holding a first cycle university degree can apply for admission into graduate university programmes or specialist professional graduate programmes, or enter the labour market.

Graduate university programmes – second cycle programmes (*diplomski sveučilišni studij)* - normally last for two years in which students accumulate 120 ECTS. A minority of graduate programmes in Croatia are delivered as one year programmes in which students accumulate 60 ECTS. The total number of credits accumulated during first and second cycle programmes is at least 300. Upon completion students are awarded a document called *diploma* and the academic title *magistar or magistra* with reference to a specialisation. Students holding a second cycle university degree can continue their studies at postgraduate university programmes or enter the labour market. Integrated undergraduate and graduate university programmes - first and second cycle programmes (*integrirani preddiplomski i diplomski sveučilišni studij*) - normally last for five or six years in which students respectively accumulate a minimum of 300 ECTS. Upon completion students are awarded a document called *diploma* and the academic title *magistar* or *magistra* with reference to a specialisation. Upon completion of integrated first and second cycle programmes in medicine, dental medicine or veterinary medicine students are awarded the academic title of *doktor* or *doktorica* with reference to their field of study.

Students can continue their studies at postgraduate university programmes or enter the labour market. Postgraduate doctoral programmes – third cycle programmes (*poslijediplomski sveučilišni studij*) – normally last for three years. Upon completion students are awarded a document called *diploma* and the academic degree of *doktor znanosti or doktorica znanosti* with reference to their field of science.

Graduate university programmes – specialist (*poslijediplomski specijalistički studij*) normally last one to two years (courses only). This study program is usually dedicated to employed persons who have already completed graduate university studies or specialist professional graduate study and want to continue their education in a certain field. Upon completion

students are awarded a document called *diploma* and the title of *sveučilišni specijalist or sveučilišna specijalistica* in a certain field. Students of graduate specialist programmes in medicine, dental medicine or veterinary medicine are awarded the title of *sveučilišni magistar or sveučilišna magistra* with reference to their field of study. Titles conferred after completion of graduate specialist programmes can be used together with titles received after completion of graduate study programmes.

Organization of professional study programmes:

Short-cycle professional programmes (*stručni studij*) normally last for two or two-and-a-half years, in which students accumulate between 120 and 150 ECTS, respectively. Upon completion students are awarded a document called *svjedodžba* and the professional title *stručni pristupnik* or *stručna pristupnica* with reference to a specialization. Students holding a short-cycle professional degree can apply for admission to a programme for the completion of a first cycle professional degree or enter the labour market.

Professional programmes – first cycle programmes (*stručni studij*) - usually last for three years in which students accumulate 180 ECTS. A minority of professional programmes in Croatia are delivered as four year programmes in which students accumulate 240 ECTS. Upon completion students are awarded a document called *svjedodžba* and the professional title of *stručni prvostupnik* or *stručna prvostupnica (baccalaureus/baccalaurea)* with reference to their specialisation. Students holding a first cycle professional degree may apply for admission into specialist professional graduate programmes, to a second cycle university programme under special conditions, or enter the labour market.

Specialist professional graduate programmes – second cycle programmes (*specijalistički diplomski stručni studij)* - normally last for two years in which students accumulate 120 ECTS. A minority of specialist professional graduate programmes in Croatia are delivered as one year programmes in which students accumulate 60 ECTS. The total number of ECTS credits accumulated during first and second cycle professional programmes is at least 240 ECTS. Upon completion of specialist professional graduate programmes students are awarded a document called *diploma* and the professional title *stručni specijalist* or *stručna specijalistica* in a certain field. Students graduating in the fields of medicine, dental medicine or veterinary medicine are awarded the professional title of *diplomirani* or *diplomirana* with reference to their field of study.

Quality Assurance in Croatian Higher Education:

Quality assurance in higher education is regulated by the 2009 Act on Quality Assurance in Higher Education and Science. Internal quality assurance is provided by the institutions' internal quality assurance (QA) systems in the form of self-evaluation procedures.

Study programmes delivered at public universities are self-accredited by university senates, while programmes delivered by private higher education institutions, polytechnics or colleges are accredited by the Agency for Science and Higher Education (ASHE).

The ASHE is an independent public body responsible for external quality assurance in Croatia and implements regular audits, evaluations, accreditation of professional study programmes and re-accreditation of all higher education institutions. The ASHE is composed of three bodies: the Management Board, Director and the Accreditation Council. The bodies are composed of representatives of all stakeholders from the systems of science and higher education, including students. For the purpose of achieving a higher degree of transparency and public trust, a representative of a non-governmental organisation within the area of higher education participates in the work of the Accreditation Council. The Accreditation Council is the professional council of the Agency which adopts documents related to external evaluation procedures and serves as the final opinion on the quality of higher education institutions and scientific organisations.

The Accreditation Council is composed of 11 permanent members appointed for a four-year term by the ASHE Management Board.

The members of the Council are nominated at the request of the ASHE by the following bodies:

- Rectors' Conference;
- Council of Polytechnics and Colleges;
- Croatian Chamber of Economy;
- Croatian Students' Council;
- National Council for Science;
- National Council for Higher Education.

On the basis of these nominations, the Director proposes candidates which are appointed by the Management Board to a term of four years.

The Accreditation Council may have associate members from non-governmental and non-profit organizations recognized as stakeholders in the areas of science and higher education. Associate members are appointed by the Accreditation Council upon the proposal of the Director and have no voting rights. The Director of the Agency participates in the activities of the Accreditation Council without voting rights.

Public officials cannot become members of the Accreditation Council. The Accreditation Council provides the following tasks:

- adopts documents for the implementation of the procedure of initial accreditation and reaccreditation of higher education institutions, study programmes, and scientific organizations as well as carries out the procedure of thematic evaluation, audit and development of higher education institutions and scientific organizations;
- provides standards and indicators for the quality assessment of evaluation objects;
- establishes a plan for carrying out the procedures of external evaluation;
- appoints members of the boards of experts for carrying out the procedures of external evaluation;
- provides an opinion on the final reports of the review committees on the procedures carried out during external evaluation;
- appoints members of the committees dealing with appeals to the procedures carried out during external evaluation;

- submits an annual report on its work to the director;
- submits a proposal for an annual work programme within the scope of its activities and establishes the composition and mode of operation of working bodies of the Accreditation Council;
- decides on other professional issues at the request of the Management Board and the ASHE Director.

The Directory of Study Programmes, published on the ASHE website, was created with the aim to provide a one-stop-shop for information on all levels of accredited study programmes available in the Republic of Croatia. The ASHE encourages the development of scientific skills, knowledge and research, monitors the system of quality in science and higher education in the Republic of Croatia, and carries out systematic educational activities at the national level, especially regarding the education of members of professional bodies involved in the evaluation procedures within the system of external quality assurance and development of science and higher education.

One of the roles of the ASHE is to administer and support the activities of the National Council for Higher Education, National Council for Science, Council for Financing Scientific Activity and Higher Education, Council of Polytechnics and Colleges, Ethics Committee in Science and Higher Education, 7 Scientific Field Committees, 22 Area Councils and expert bodies.

Public higher education institutions (HEI) other than universities (polytechnics and colleges), and all private HEIs need to submit proposals of their study programmes to ASHE which subsequently starts the accreditation procedure within eight days and arranges a peer review team to evaluate the proposed programme. Following the opinion of the peer review team, the ASHE within 60 days recommends whether the Minister of Education should issue a license or not (this is a formal arrangement and the MSES is obliged to accept the ASHE recommendations and decisions). These programmes are also subject to cyclical reaccreditation every five years. In the case of accreditation of new institutions, all such proposals must include an agreement with an already accredited HEI about the joint provision of an already accredited study programme. After a period of two years, the new institution may apply for independent awarding of qualifications. The Agency for Science and Higher Education then appoints a peer review team to evaluate the proposal and submit its accreditation decision to the Minister of Education. All higher education institutions are subject to cyclical reaccreditation every five years.

Table 2.11: Undergraduate university study (*preddiplomski sveučilišni studij*)

Entry requirements:	3- or 4-year secondary school; Higher education institutions define precise access requirements.
Education and training:	Undergraduate university programmes last for a minimum of three years in which students accumulate a minimum of 180 ECTS. A minority of undergraduate university programmes in Croatia are delivered as 4-year programmes in which students accumulate 240 ECTS. Providers of the programmes are accredited universities.
Financing:	Public and private
Teachers qualifications:	PhD in the academic field concerned, with additional requirements in teaching and research

Expected learning outcomes:	Learning outcomes include management of professional projects in unpredictable conditions.
Assessment and awards:	The university providing education and training also performs assessments. Assessments can be internal, continuous and/or final. Assessors at universities are accredited by national bodies and/or universities. Upon completion of a study programme students are awarded the academic title of *sveučilišni prvostupnik* / *sveučilišna prvostupnica* (baccalaureus / baccalaurea) with reference to their field of study. The awarded document is called *svjedodžba.*
Progression routes:	Students holding this degree can access graduate university programmes (*diplomski sveučilišni studij*) or specialist professional graduate programmes (*specijalistički diplomski stručni studij*).
Labour market:	Students holding this qualification enter the labour market meeting the requirements for managing professional projects in unpredictable conditions.
Quality assurance:	Universities are accredited/reaccredited by the Agency for Science and Higher Education. Study programmes are validated and accredited by universities and the Agency, in case of private universities. Access, education, assessment and awards are ensured by both internal and external quality assurance systems.
Example:	*Sveučilišni prvostupnik inženjer / sveučilišna prvostupnica inženjerka drvne tehnologije* Entry requirements: 4-year secondary school, State Matura exam (*Državna matura*). Education and training: Duration of the programme is 3 years (180 ECTS credits). The only provider in Croatia is the University of Zagreb, Faculty of Forestry. Expected learning outcomes: a) general engineering competencies - apply a physical approach of experimental observation and mathematical modelling, solve mathematically various research and practical problems, statistically process, present and analyse data, and reach conclusions based on analysed data; - apply the laws of physics that present the basis of wood technology, understand Newton's axioms and apply them to solve technical problems, explain phenomena in the field of electrical engineering and make accurate and optimal use of electric energy; - competently maintain, work with and make us of the potentials of basic technical components; - apply skills in solving practical issues in the business, either by control measurements, calculations or testing verifications. b) focused engineering competencies - identify parts and shapes of trees, macroscopic, physical and chemical properties of wood, identify and explain the anatomic structure of the xylem of wood-like plants, identify wood-like species based on different morphological characteristics, and apply theoretical and practical knowledge of commercially

	important indigenous and foreign species of wood and shrubbery; - recognise and determine the most important types of xylophagous bacteria, insects, fungi and marine borers, and determine flaws on wood incurred due to their activity; learn the basic principles of wood protection based on the physical, chemical and structural properties of wood, and apply basic procedures and methods for wood protection; - apply knowledge about the mechanical properties of wood, mechanical properties within individual trees and group of trees, tree flaws and the influence of flaws on the mechanical properties of wood; - organise transport of wood and wooden materials, calculate and adjust the capacities of means of transport with technological procedures, calculate and analyse energy consumption, and recommend solutions for less complex wood and wooden material transport projects. c) technological engineering competencies - analyse the wood cutting process, select, optimally use and maintain primary process machinery, select machinery working regimes and tools for final wood processing, and recommend project assignments to special equipment manufacturers; - recognise and assess sawmilling raw materials and products, conduct the categorisation and measurements of sawmilling raw materials and products, apply basic skills of wood sawmilling technology and techniques of log and board sawing, and identify factors of successful sawmilling wood processes; - monitor and control processes of massive wood, veneer and wood particle drying, other special drying processes, and wood steaming; - recognise particular types of veneer and wood panels, analyse the basic structural components of wood panels, explain the interdependency of structural components and technical properties of wood panels, monitor and control the manufacturing process in wood board factories, select and use wood panels with optimal properties; - size construction, define systems of construction composition as a prerequisite for product construction, define basic construction documentation and develop it systematically, apply CAD systems in the wood industry and 2D modelling with the help of AutoCAD; - use wood gluing technology, select materials with optimal properties important for final processing, apply simpler technological methods in final wood processing; - define the specifics of wood usage in construction, recommend adequate applications of a particular type of wood for building purposes, recommend the basic shape of physical and construction solutions, explain and ensure functional requirements, types and construction solutions for main product groups; - recommend materials and procedures applied in interior and exterior wood finishing processes, operate wood finishing processes from base preparation to the hardening of the material. d) organisational engineering competencies - plan and organise time study and work rationalisation, and perform quality control in technological processes and on finished products, maintain supply, stock and logistic support optimization, plan and calculate production, calculate basic business KPIs, write basic financial reports, recognise types of expenses; - perform wood industry-specific calculations, define and analyse expenses,

	organise and conduct distribution, promotion and market research, plan products and product programmes, form product cost and selling prices, organise and conduct sales of wood and wooden products. e) development of engineering competencies - continue specialization within university graduate studies at the Wood Technology Department of the Faculty of Forestry. Assessment and awards: The same provider also performs assessments. Assessments are internal, continuous and/or final. Upon completion of the study programme students are awarded the academic title of *sveučilišni prvostupnik / sveučilišna prvostupnica drvne tehnologije* Routes for progression: Students holding this degree can directly access graduate university programmes in wood technology processes and wood product design. In accordance with requirements it is also possible to access a number of graduate university programmes and specialist professional graduate programmes. On the labour market: Students holding this degree can enter into all companies involved in wood design and wood processing, associates in commercial transactions and distribution of wood products, as well as certain works and tasks in wood processing entrepreneurship. Students are trained to perform supervision of the process of drying of wood and wood materials and also processing in sawmills, are able to supervise the production of veneer, solid wood panels and particle boards, as well as the production of furniture, timber and other wood products. Quality assurance: The institution administering the study programme and awarding the qualification is a public institution of higher education. Accreditation was issued by the Ministry of Science, Education and Sports on December 17th 2002. Accreditation for the undergraduate university study programme in Wood Technology was issued by the Ministry of Science, Education and Sports on June 16th 2005. The institution has an internal quality assurance system. Reaccreditation and external evaluation of the quality assurance system will be provided by ASHE.

Table 2.12: Graduate university study (*diplomski sveučilišni studij*)

Entry requirements:	Bachelor degree or 3- or 4-year secondary school, in case of integrated studies; Higher education institutions define precise access requirements.
Education and training:	Graduate university programmes last a minimum of one year in which students accumulate a minimum of 60 ECTS credits. The total number of credits accumulated during the first and second cycle programmes is at least 300 ECTS. Integrated undergraduate and graduate university programmes – first and second cycle programmes (*integrirani preddiplomski i diplomski sveučilišni studij*) - last a minimum of 5 years in which students accumulate a minimum of 300 ECTS credits. Providers of the programmes are accredited universities.

Financing:	Public and private
Teachers qualifications:	PhD in the academic field concerned, with additional requirements in teaching and research
Expected learning outcomes:	Learning outcomes include management of complex and changeable conditions within the environment, and making decisions on changing them.
Assessment and awards:	The same universities providing education and training also perform assessments. Assessments are internal, continuous and/or final. Assessors at the universities are accredited by national bodies and/or universities. Upon completion of a study programme students are awarded the academic title of *magistar* / *magistra* with reference to their field of study. Upon completion of integrated undergraduate and graduate study programmes students are awarded the academic title *magistar / magistra* with reference to their field of study. Upon completion of integrated first and second cycle programmes in medicine, dental medicine or veterinary medicine students are awarded the academic title of *doktor* / *doktorica* with reference to their field of study. The awarded document is called *diploma.*
Progression routes:	Students holding this degree can access postgraduate university programmes (doctoral) or graduate university programmes – specialist.
Labour market:	Students holding this qualification enter the labour market meeting requirements to manage professional projects in complex and unpredictable conditions.
Quality assurance:	Universities are accredited/reaccredited by the Agency for Science and Higher Education. Study programmes are validated and accredited by universities and the Agency, in the case of private universities. Access, education, assessment and awards are ensured by both internal and external quality assurance systems.
Example 1:	*Magistar / magistra teorijske matematike* Entry requirements: Baccalaureus / baccalaurea in Mathematics. Education and training: The duration of the programme is 2 years (120 ECTS credits). The only provider in Croatia is the University of Zagreb, Faculty of Science. Assessment and awards: The provider also performs assessments. Assessments are internal, continuous and/or final. Upon completion of a study programme students are awarded the academic title of *magistar* / *magistra teorijske matematike* (Master of Science in Pure Mathematics); Routes for progression: Students holding this degree can directly access postgraduate university studies in Mathematics (PhD). In accordance with requirements it is also possibly to access a number of

	graduate university programmes – specialist and specialist professional graduate programmes. On the labour market: Students holding this degree can enter the labour market: research institutions and universities as research and teaching assistants, universities, or any job demanding complex mathematical analysis.
Example 2:	*Magistar inženjer građevinarstva / magistra inženjerka građevinarstva* Entry requirements: Baccalaureus / baccalaurea in Civil Engineering (Undergraduate university study) or other Baccalaureus / baccalaurea in Engineering. Higher education institutions define precise access requirements. Expected learning outcomes: At the end of this programme a student is able to: - Formulate equations of mathematical physics with implementation in engineering problems, and solve them in closed form or by numerical methods; - Evaluate dynamic properties and analyse structures under dynamic loading; - Design and calculate stability and bearing capacity of geotechnical structures; - Design complex reinforced concrete structures; - Design complex metal structures; - Design complex masonry structures; - Design complex prestressed concrete structures; - Evaluate reliability of structures by probabilistic methods; - Design concrete bridges; - Design metal bridges; - Evaluate and analyze operational research techniques in civil engineering, and application of methods of system analysis and mathematical modelling. Education and training: The duration of the programme is 2 years (120 ECTS). Providers in Croatia are the Universities of Zagreb, Split, Rijeka and Osijek. Assessment and awards: The provider also performs assessments. Assessments are internal, continuous and/or final. Upon completion of a study programme students are awarded the academic title of *magistar inženjer građevinarstva / magistra inženjerka građevinarstva.* Route for progression: Students holding this degree can directly access postgraduate university studies in Civil Engineering (PhD). In accordance with requirements it is also possibly to access to a number of graduate university programmes – specialist and graduate specialist professional programmes. On the labour market: Students holding this degree can enter the labour market as: Senior Engineer (as a certified engineer); Construction Manager; Project Design Engineer (for specific

	activities related to the design); or Supervision Engineer (for specific activities related to supervision). Quality assurance: QA systems and procedures are defined in institutional (university, faculty) rulebooks and handbooks. QA of the expected learning outcomes includes: student examinations of teaching processes, questioning alumni (former students) and stakeholders (labour market / employers), contact between alumni club contacts and professional chambers.

Table 2.13: Graduate university study – specialist (*poslijediplomski specijalistički studij*)

Entry requirements:	Graduate university degree; Higher education institutions define precise entrance requirements.
Education and training:	It last for a minimum of one year in which students accumulate a minimum of 60 ECTS credits. Programme providers are accredited universities.
Financing:	Public and private
Teachers qualifications:	PhD in the academic field concerned, with additional requirements in teaching and research
Expected learning outcomes:	Learning outcomes include management of complex and changeable conditions within the environment, and making decisions on changing them
Assessment and awards:	The universities providing education and training also perform assessments. Assessments are internal, continuous and/or final. Assessors at the universities are accredited by national bodies and/or universities. Upon completion of a study programme students are awarded an academic title of *sveučilišni specijalist* / *sveučilišna specijalistica* with reference to their field of study. Upon completion of a study programme in medicine students are awarded a qualification with the academic title of *sveučilišni magistar* / *sveučilišna magistra* with a reference to their field of study. The awarded document is called *diploma.*
Progression routes:	Students holding this degree can access postgraduate doctoral programmes.
Labour market:	Students holding this qualification enter the labour market meeting requirements to manage professional projects in complex and unpredictable conditions.
Quality assurance:	Universities are accredited/reaccredited by the Agency for Science and Higher Education. Study programmes are validated and accredited by universities and the Agency, in the case of private universities. Access, education, assessment and awards are ensured by both internal and external quality assurance systems.
Example:	*Sveučilišni specijalist / sveučilišna specijalistica ekoinženjerstva* Entry requirements: *Magistar* (second cycle) in appropriate technical or natural sciences; Education and training:

	The duration of the programme is 1 year (60 ECTS credits). The only provider in Croatia is the University of Zagreb. Assessment and awards: The provider also performs assessments. Assessments are internal, continuous and/or final. Upon completion of a study programme students are awarded the academic title of *sveučilišni specijalist* / *sveučilišna specijalistica ekoinženjerstva* (University specialist in Ecoengineering); Routes for progression: Students holding this degree can directly access appropriate postgraduate university studies (PhD). On the labour market: Students holding this degree can enter into private or public bodies or enterprises as experts, managers or consultants.

Table 2.14: Postgraduate university (doctoral) study (*poslijediplomski sveučilišni studij*)

Entry requirements:	Graduate university degree; Higher education institutions define precise entry requirements.
Education, training and research:	Postgraduate university (doctoral) programmes last a minimum of 3 years. Universities determine whether ECTS credits will be used within postgraduate study programmes or not. Providers of the programmes are accredited universities and institutes. Students have at least one supervisor.
Financing:	Public and private
Teachers qualifications:	PhD in the academic field concerned, with additional requirements in teaching and research
Expected learning outcomes:	Learning outcomes include personal, professional and ethical authority and a sustained commitment to the research and development of new ideas and processes.
Assessment and awards:	Universities perform assessments. Assessments within taught courses are internal, continuous and/or final. The final assessment is an internal or external public defence of a PhD thesis. Assessors at are accredited by national bodies and/or universities and institutes. Upon completion of a study programme students are awarded the academic title of *doktor/doktorica znanosti / umjetnosti* with reference to their field of study.
Progression routes:	NA
Labour market:	Researchers holding this qualification enter the labour market meeting requirements to manage research projects in complex and unpredictable conditions.
Quality assurance:	Universities are accredited/reaccredited by the Agency for Science and Higher Education. Study programmes are validated and accredited by universities and the Agency, in case of private universities. Access, education, assessment and awards are ensured by both internal and external quality assurance systems.
Example:	*Doktor znanosti / doktorica znanosti prava*

	Entry requirements: *Magistar prava* (second cycle), equivalent, or any other second cycle qualification. Education and training: The duration of the programme is 3 years (180 ECTS credits, with 60 ECTS from taught courses and 120 ECTS from research activities). The only provider in Croatia is the University of Zagreb, Faculty of Law. Assessment and awards: The provider also performs assessments. Assessments within taught courses are internal, continuous and/or final. The final assessment is an internal or external public defence of a PhD thesis. Upon completion of a study programme students are awarded the academic title of *doktor znanosti* / *doktorica znanosti prava* (PhD in Law). On the labour market: Researchers holding this degree can enter private or public bodies or enterprises.

Table 2.15: Short cycle professional study (*stručni studij*)

Entry requirements:	3- or 4-year secondary school. Higher education institutions define precise entry requirements.
Education and training:	Professional short cycle programmes last a minimum of two years in which students accumulate a minimum of 120 ECTS credits. Providers of the programmes are accredited higher education institutions, including universities.
Financing:	Public and private
Teachers qualifications:	Higher education second cycle qualification in the academic field concerned, with additional requirements in teaching
Expected learning outcomes:	Learning outcomes include management of activities in partially unpredictable conditions.
Assessment and awards:	The higher education institutions providing education and training also perform assessments. Assessments can be internal, continuous and/or final. Assessors at higher education institutions are accredited by national bodies and/or higher education institutions. Upon completion of a study programme students are awarded the professional title of *stručni pristupnik* / *stručna pristupnica* with reference to their field of study. The awarded document is called *svjedodžba.*
Progression routes:	Students holding this degree can access undergraduate professional programmes.
Labour market:	Students holding this qualification enter the labour market meeting requirements for taking part in the management of activities in unpredictable conditions.
Quality assurance:	Higher education institutions are accredited /reaccredited by the Agency for Science and Higher Education. Study programmes are validated and accredited by higher education institutions and the Agency. In case of public universities it is not necessary that programmes be validated by the Agency.

	Access, education, assessment and awards are ensured by both internal and external quality assurance systems.
Example:	*Stručni pristupnik/ stručna pristupnica računarstva* Entry requirements: 3- or 4-year secondary school Education and training: The duration of the programme is 2.5 years (150 ECTS credits). The only provider in Croatia is the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture. Assessment and awards: The provider also performs assessments. Assessments are internal, continuous and/or final. Upon completion of a study programme students are awarded the academic title of *stručni pristupnik* / *stručna pristupnica računarstva* (short cycle in computing); Routes for progression: Students holding this degree can access appropriate graduate specialist professional programmes. On the labour market: Students holding this degree can enter the labour market with the ability to implement maintain and supervise computing systems.

Table 2.16: Undergraduate professional study (*stručni studij*)

Entry requirements:	3- or 4-year secondary school Higher education institutions define precise entry requirements.
Education and training:	Undergraduate professional programmes last a minimum of three years in which students accumulate minimum of 180 ECTS credits. Providers of the programmes are accredited higher education institutions, including universities.
Financing:	Public and private
Teachers qualifications:	PhD in the academic field concerned, with additional requirements in teaching and research
Expected learning outcomes:	Learning outcomes include management of professional projects in unpredictable conditions.
Assessment and awards:	The higher education institutions providing education and training also perform assessments. Assessments can be internal, continuous and/or final. Assessors at higher education institutions are accredited by national bodies and/or higher education institutions. Upon completion of a study programme students are awarded the professional title of *stručni prvostupnik* / *stručna prvostupnica* (baccalaureus / baccalaurea) with reference to their field of study. The awarded document is called *svjedodžba.*
Progression routes:	Students holding this degree can access specialist professional graduate studies and graduate university studies.
Labour	Students holding this qualification enter the labour market meeting

market:	requirements to manage professional projects in unpredictable conditions.
Quality assurance:	Higher education institutions are accredited/re-accredited by the Agency for Science and Higher Education. Study programmes are validated and accredited by higher education institutions and the Agency. In case of public universities it is not necessary that programmes be validated by the Agency. Access, education, assessment and awards are ensured by both internal and external quality assurance systems.
Example:	*Stručni prvostupnik inženjer / stručna prvostupnica inženjerka građevinarstva* Entry requirements: 4-year secondary school, state examination (*matura*) Education and training: The duration of the programme is 3 years (180 ECTS credits). Providers in Croatia are: Polytechnic of Zagreb; University of Split; University of Rijeka; University of Osijek. Assessment and awards: The provider also performs assessments. Assessments are internal, continuous and/or final. Upon completion of study programme students are awarded the professional title of s*tručni prvostupnik inženjer / stručna prvostupnica inženjerka građevinarstva* (baccalaureus / baccalaurea in civil engineering); Routes for progression: Students holding this degree can directly access appropriate specialist professional graduate programmes. In accordance with requirements, it is also possible to access appropriate graduate university programmes. On the labour market: Students holding this degree can enter construction companies and public bodies as: senior or associate engineer, construction manager or assistant designer.

Table 2.17: Specialist professional graduate study (*specijalistički diplomski stručni studij*)

Entry requirements:	Undergraduate professional studies or undergraduate university studies; Higher education institutions define precise entry requirements.
Education and training:	Specialist professional graduate studies last a minimum of one year in which students accumulate a minimum of 60 ECTS. Providers of programmes are accredited higher education institutions, including universities.
Financing:	Public and private
Teachers qualifications:	PhD in the academic field concerned, with additional requirements in teaching and research
Expected learning outcomes:	Learning outcomes include management of complex and changeable conditions within the environment, and making decisions on changing them.
Assessment and awards:	The higher education institutions providing education and training also perform assessments. Assessments can be internal, continuous and/or final.

	Assessors at higher education institutions are accredited by national bodies and/or higher education institutions. Upon completion of study programme students are awarded the professional title of *stručni specijalist / stručna specijalistica* with reference to their field of study.
Progression routes:	Graduate university study programmes – specialist
Labour market:	Students holding this qualification enter the labour market meeting requirements to manage professional projects in complex and unpredictable conditions.
Quality assurance:	Higher education institutions are accredited /reaccredited by the Agency for Science and Higher Education. Study programmes are validated and accredited by higher education institutions and the Agency. In case of public universities it is not necessary that programmes be validated by the Agency. Access, education, assessment and awards are ensured by both internal and external quality assurance systems.
Example:	*Stručni specijalist inženjer / stručna specijalistica inženjerka zaštite na radu* Entry requirements: Short cycle professional studies, undergraduate professional studies or undergraduate university studies Education and training: The duration of the programme is 1 year (60 ECTS credits). The provider in Croatia is the College for Safety at Work. Assessment and awards: The provider also performs assessments. Assessments are internal, continuous and/or final. Upon completion of a study programme students are awarded the professional title of *stručni specijalist inženjer / stručna specijalistica inženjerka zaštite na radu* (professional specialist in safety at work). On the labour market: Students holding this degree enter the labour market with the ability to manage and audit safety at work in companies with more than 250 employees. They are also qualified to provide training on safety procedures.

2.1.6. Diploma Supplement

The EU/CoE/UNESCO format of the diploma supplement was established in Croatia through the Ordinance on the Content of Diplomas and Diploma Supplements in January 2005. Amendments to this Ordinance that came into force in April 2007 ensure that all students graduating from reformed Bologna study programmes at Croatian HEIs from 2007 will receive their diploma supplements automatically, free of charge, in Croatian and English and in the EU/CoE/UNESCO format. The MSES issued a nationwide handbook in July 2008.

REPUBLIC OF CROATIA

UNIVERSITY OF SPLIT
FACULTY OF CIVIL ENGINEERING, ARCHITECTURE AND GEODESY

DIPLOMA SUPPLEMENT

NAME SURNAME
Born DD Month YYYY in Town,
Republic of Croatia
Student identification number: 123456789

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international transparency and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1 Surname: **SURNAME**

1.2 First name: **NAME**

1.3 Date, place and state of birth: **DD Month YYYY, Place, Republic of Croatia**

1.4 Student identification number: **123456789**

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred:
Magistar inženjer građevinarstva (mag. ing. aedif.) / Master of Science in Civil Engineering

2.2 Main field(s) of study for the qualification:
Technical sciences – Civil Engineering

2.3 Name and status of awarding institution (in original language):
Sveučilište u Splitu, Fakultet građevinarstva, arhitekture i geodezije, (public higher education institution).
Accreditation: Ministry of Science, Education and Sports class UP/I-602-04/05-16/252 No. 533-07-05-2, June 2nd 2005.

2.4 Name and status of institution (if different from 2.3) administering study (in original language):
Same as 2.3.

2.5 Language(s) of instruction/examination:
Croatian.

3. INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1 Level of qualification:
Graduate university study (master degree), 7.1 level of the Croatian Qualifications Framework (CROQF)

3.2 Official length of programme:
The study includes 4 terms (2 years). After the completion of the study the student obtains at least 120 ECTS. In each term the student should obtain a minimum of 30 ECTS. The term includes 15 weeks with a student's work load consisting of a maximum of 25 hours of teaching and a minimum of 15 hours of independent work (a total of 40 hours a week). Regular exam terms are during 3 periods which last 4 weeks.

3.3 Access requirement(s):
The candidate can enrol in Graduate university study after completing studies at 6th level of the Croatian Qualifications Framework:
Undergraduate university study in Civil Engineering (minimum 180 ECTS)
Undergraduate university study in technical sciences (minimum 180 ECTS) if the difference in volume of the required learning outcomes is maximum 60 ECTS.
Professional undergraduate study in Civil Engineering (minimum 180 ECTS) having certificate of institutional validation of the difference in required learning outcomes
Professional undergraduate study in technical sciences (minimum 180 ECTS) if the difference in volume of the required learning outcomes is maximum 60 ECTS.

4. INFORMATION ON THE CONTENTS AND RESULTS

4.1 Mode of study:
Full-time study

4.2 Programme requirements:
The requirements include passing all exams and satisfying all other conditions proposed by the respective study programme, as well as the completion of the Diploma written and oral form)
After completing the study programme a student will:

- formulate equations of mathematical physics for engineering problems, solve the equations in closed-form and by applying numerical methods
- design and analyse conventional reinforced concrete structures
- assess dynamic characteristics and analyse conventional structures to earthquake
- design and analyse conventional geotechnical structures
- design hydrotechnical structures, water supply systems, sewage systems, hydro-energy systems
- analyse and assess problems related to water resources management
- analyse and assess problems related to catchment run-off, water balances
- apply statistical methods in hydrology
- design and dimensioning of marine structures in coastal seas
- design of highway and railway pavements
- analyze and evaluate traffic flow and level of service, design of crossroads
- analyze rock characteristics and design & analyse complex geotechnical structures
- apply system analysis and operational research in civil engineering
- plan hydro-power, manage and design energy objects
- assess the production based on conventional indicators, assess a company based on balance sheet, analyse & assess an investment
- determine optimal location, type and design elements of interchanges
- plan and design of traffic areas (surface parkings, parking garages, gas stations, public transport areas)
- plan life cycle of civil engineering projects, optimize project processes, assess and validate project management processes
- apply system analysis, decision theory and information technology to decision making processes in civil engineering
- manage business processes and human resources in civil engineering companies

Competences the students acquire after the completion of Graduate university study are sufficient conditions for attending the programme of Postgraduate university study at the Faculty of Civil Engineering and Architecture in Split as well as for attending postgraduate specialist studies in civil engineering, the same or similar programmes at other faculties of Civil Engineering in Croatia. The acquired fundamental knowledge enables the students to attend the courses of other engineering curricula.

4.3 Programme details and grades /marks/ credits obtained (Note: information on the programme is a reliable transcript of records):

Ac. year	Term	No.	Code	Course	Total hours (L+E)	Course status	Grade	ECTS
20xx./20xx.	I	1.	GAB701	Applied mathematics	30 + 30	Compulsory	X	5.0
		2.	GAE701	Concrete structures I	30 + 30	Compulsory	X	5.0
		3.	GAO701	Dynamics of structures and earthquake engineering	30 + 30	Compulsory	X	5.0
		4.	GAG703	Geotechnical engineering	30 + 30	Compulsory	X	5.0
		5.	GAH701	Hydraulics	30 + 30	Compulsory	X	5.0
		6.	GAF701	Pavement of roads and railways	30 + 30	Compulsory	X	5.0
	II	7.	GAJ701	Water resource management	30 + 30	Compulsory	X	5.0
		8.	GAI701	Engineering hydrology	30 + 30	Compulsory	x	5.0
		9.	GAK701	Coastal engineering	30 + 30	Compulsory	X	5.0
		10.	GAF702	Traffic engineering	30 + 30	Compulsory	X	5.0
		11.	GAG701	Rock mechanics	30 + 30	Compulsory	X	5.0
		12.	GAL701	Operational research in civil engineering	30 + 30	Compulsory	X	5.0
20xx./20xx.	III	13.	GAK801	Hydro power energy	30 + 30	Compulsory	X	5.0
		14.	GAL701	Business and investments in civil engineering	30 + 30	Compulsory	X	5.0
		15.	GAL702	Project management	45 + 15	Elective	X	4.0
		16.	GAF801	Highway interchanges	30 + 30	Elective	X	4.0
		17.	GAF802	Urban traffic areas	30 + 30	Elective	X	4.0
		18.	GAL704	Decision systems in civil engineering	45 + 15	Elective	X	4.0
		19.	GAL703	Management in civil engineering	45 + 15	Elective	X	4.0
	IV	20.	GAX801	Diploma work	-	Compulsory	X	30.0

Note: grades of all courses are according to the national grading scale (see Item 4.4.1), except for the courses marked [###] –according to the ECTS grading scale (see Item 4.4.2).

The student enrolled in academic year 20XX, completed his/her study in academic year 20XX. During his/her study he/she acquired a total of XX ECTS.

The topic of the written diploma work: **TOPIC OF THE DIPLOMA WORK**

The mentor of the written diploma work: **NAME SURNAME**

4.4 Grading scheme and, if available, grade distribution guidance:
Two grading systems are being applied: general and relative (ECTS grading scheme)

4.4.1 General grading scheme in Croatia
The passing grades are: sufficient (2), good (3), very good (4), excellent (5).
The grade point average is calculated by multiplying the quantitative grade value by the ECTS credit value of the correlative course, and then dividing the sum of all products by the sum of all ECTS credits. Final work is included in the calculation of the grade point average if numerical assessment is specified. The student, who obtain a failing grade (1) for any course has not satisfied the conditions required for acquiring the qualification proposed by these studies.

4.4.2 ECTS grading scheme
The Faculty Council of the Faculty of Civil Engineering and Architecture in Split, in executive curricula defines courses which use the ECTS grading scale adapted to the national grading scale. The ECTS system initially divides students between pass and fail groups. Those obtaining passing grades are divided into four subgroups: the best 15% are awarded an A-grade, the next 35% a B-grade, the following 35% a C-grade and the final 15% a D, E-grade. Those who have not achieved a performance sufficient to allow a passing grade are divided into two subgroups: FX (Fail – some more work required before credit can be awarded) and F (Fail – considerable further work is required). This assessment system can be applied only if the minimum number of students achieve passing grades is 30.

Relationship between national and ECTS grading scale:

5	=>	A	A	=>	5
4	=>	B	B	=>	4
3	=>	C	C	=>	3
2	=>	D	D, E	=>	2
1	=>	F	FX, F	=>	1

DRAFT

4.5 Overall classification of the qualification (in original language): izvrstan / vrlodobar / dobar / dovoljan

The grade point average is: X.XX

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further studies:
- Postgraduate university studies in Civil Engineering (3rd cycle, PhD in Civil Engineering)
- Postgraduate specialist studies in Civil Engineering (2nd cycle, specialist).
- Postgraduate university studies in other engineering fields (3rd cycle, PhD in Civil Engineering) - according to the conditions of the study programs applied to.
- Postgraduate specialist studies in other engineering fields (3rd cycle, PhD in Civil Engineering) - according to the conditions of the study programs applied to.

5.2 Professional status:
- Can apply for licensure (certified engineer)
- Senior Engineer
- Project Engineer (as certified engineer)
- Project Design Engineer (as certified engineer)
- Supervision Engineer (as certified engineer)

6. ADDITIONAL INFORMATION

6.1 Additional information:
- During the year 20XX/YY the student was a demonstrator for the course _____ and during the year 2006./07. from the course _____
- During the year 20XX/YY the student was elected to be a student representative in the Faculty Council
- In the year 20XX/YY the student was awarded the Rector award
- In the year 20XX/YY the student was awarded a prize from a civil engineering firm _____

6.2 Further information sources:

Web pages of the Faculty of Civil Engineering and Architecture, University of Split: www.gradst.hr
Web pages of the Ministry of Science, Education and Sports, Croatia: www.mzos.hr
Web pages of the Ministry of Environmental Protection, Physical Planning and Construction, Croatia: www.mzopu.hr

5

7. CERTIFICATION OF THE SUPPLEMENT

Date: Split, 7. February 2011

Capacity of signing person:
Dean
Prof. Alen Harapin Ph.D.

Official stamp/seal:

Class: 123456789
No: 01-5/1-5/555-07

8. INFORMATION ON HIGHER EDUCATION SYSTEM IN CROATIA

8.1. Types of institutions
Universities (*sveučilišta*) are higher education institutions which deliver university study programmes in at least two scientific and/or art areas in a greater number of fields. Exceptionally, universities may also deliver professional study programmes. Universities may have constituent higher education institutions which are legal entities and are called **faculties (*fakulteti*)** or **art academies (*umjetničke akademije*)**.
Universities and their constituents deliver study programmes and conduct scientific research and other professional and art activities.
Polytechnics (*veleučilišta*) and **schools of professional higher education (*visoke škole*)** are higher education institutions which deliver professional study programmes. These two institutions differ in the scope of the programmes they offer: polytechnics are those schools of professional higher education which deliver professional study programmes in three or more scientific fields. Their mission is to offer application-oriented programmes which are professional in character, and which often include practical work experience in the general area of study.
Public universities are established by a law, public polytechnics and schools of professional higher education are established by a decree of the Croatian Government, while private higher education institutions are established by a resolution of the founder.

8.2. Types of programmes
University study programmes allow students to work in science and higher education, private and public sectors, as well as in wider society. Graduates from university study programmes are also educated to apply and develop scientific and professional knowledge at the appropriate level.
Professional study programmes provide students an appropriate level of knowledge, skills and competences to work in applied professions, and to join any work process immediately after graduation.

8.3. Accreditation of higher education institutions and study programmes
Both higher education institutions (HEIs) and study programmes must undergo an evaluation process in order to be accredited for operation in Croatia. The request for accreditation is submitted to the ministry in charge of higher education, which requests a recommendation from the National Council for Higher Education (NCHE). The NCHE appoints an expert committee which, in cooperation with the Agency for Science and Higher Education, performs the evaluation and submits a report. A draft report is sent to the HEI which can provide comments and submit further clarifications and additions. The National Council gives a final evaluation of the proposed study programme or higher education institution and recommends to the minister to issue or deny an accreditation.

8.4. Organization of university study programmes
Since 2005, all study programmes in Croatia express student work load in terms of ECTS credits. As such, a student can accumulate 60 ECTS credits in one academic year. An exception are postgraduate programmes, in which higher education institutions autonomously determine the use of ECTS credits.

8.4.1. Undergraduate university programmes – first cycle (*preddiplomski sveučilišni studiji*) normally last for three years in which students accumulate 180 ECTS credits. A minority of undergraduate university programmes in Croatia are delivered as four year programmes in which students accumulate 240 ECTS credits. Upon completion students are awarded a document called *sveučilišna prvostupnica* and the academic title of University Baccalaureus (*sveučilišni prvostupnik*) with a reference to the field of study. Exceptionally, students graduating from technical sciences are awarded the academic title University Baccalaureus Engineer (*sveučilišni prvostupnik inženjer*) with a reference to the field of study.
Students holding a first cycle university degree can apply for admission at graduate university programmes or specialist professional graduate programmes or enter the labour market.

6

8.4.2. Graduate university programmes – second cycle (*diplomski sveučilišni studiji*) normally last for two years in which students accumulate 120 ECTS credits. A minority of graduate programmes in Croatia are delivered as one year programmes in which students accumulate 60 ECTS credits. The total number of credits accumulated at first and second cycle programmes is at least 300. Upon completion students are awarded a document called *diploma* and the academic title of Master (*magistar*) with a reference to the field of study. Exceptionally, students graduating from technical sciences are awarded the academic title Master of Engineering (*magistar inženjer*) with a reference to the field of study. Students holding a second cycle university degree can continue their study at postgraduate university programmes or enter the labour market.

8.4.3. Integrated undergraduate and graduate university programmes - first and second cycle (*integrirani preddiplomski i diplomski sveučilišni studij*) normally last for five or six years in which students respectively accumulate 300 or 360 ECTS credits. Upon completion students are awarded a document called *diploma* and the academic title Master (*magistar*) with a reference to the field of study. Upon completion of integrated first and second cycle programmes in medicine, dental medicine or veterinary medicine students are awarded the academic title of Doctor (*doktor*) with a reference to the field of study.
Students can continue their study at postgraduate university programmes or enter the labour market.

8.4.4. Postgraduate university programmes - third cycle (*poslijediplomski sveučilišni studij*) normally last for three years. Upon completion students are awarded a document called *diploma* and the academic degree of Doctor of Science or Doctor of Arts (*doktor znanosti* or *doktor umjetnosti*) with a reference to the field and branch of science. Universities autonomously determine whether ECTS credits will be awarded in postgraduate study programmes.

8.4.5. Postgraduate specialist programmes (*poslijediplomski specijalistički studij*) normally last one to two years. Upon completion students are awarded a document called *diploma* and the title of University Specialist (*sveučilišni specijalist*) with a reference to the field of study. Students of postgraduate specialist programmes in medicine, dental medicine or veterinary medicine are awarded the title of University Master (*sveučilišni magistar*) with a reference to the field of study. Titles conferred after completion of postgraduate specialist programmes can be used together with the title received after completion of graduate study programmes. Universities autonomously determine whether ECTS credits will be awarded in postgraduate study programmes.

8.5. Organization of professional study programmes

8.5.1. Short cycle professional programmes (*stručni studiji*) normally last for two or two-and- half years, in which students accumulate between 120 and 150 ECTS credits respectively. Upon completion students are awarded a document called *svjedodžba* and the professional title *stručni pristupnik* with a reference to the field of study.
Students holding a short-cycle professional degree can apply for admission for the completion of first-cycle professional degree or enter the labour market.

8.5.2. Professional programmes – first cycle (*stručni studiji*) normally last for three years in which the students accumulate 180 ECTS credits. A minority of professional programmes in Croatia are delivered as four year programmes in which students accumulate 240 ECTS credits. Upon completion students are awarded awarded a document called *svjedodžba* and the professional title of Professional Baccalaureus (*stručni prvostupnik*) with a reference to the field of study. Exceptionally, students graduating from technical sciences are awarded the professional title Professional Baccalaureus Engineer (*stručni prvostupnik inženjer*) with a reference to the field of study.
Students holding a first cycle professional degree can apply for admission at specialist professional graduate programmes, to the second cycle university programme under special conditions, or enter the labour market.

8.5.3. Specialist graduate professional programmes – second cycle (*specijalistički diplomski stručni studij*) normally last for two years in which the students accumulate 120 ECTS credits. A minority of specialist graduate professional programmes in Croatia are delivered as one year programmes in which students accumulate 60 ECTS credits. The total number of credits accumulated at first and second cycle programmes is at least 300. Upon completion of specialist graduate professional programmes students are awarded a document called *diploma* and the professional title of Professional Specialist (*stručni specijalist*) with a reference to the field of study. Exceptionally, students graduating from technical sciences are awarded the professional title Professional Specialist Engineer (*stručni specijalist inženjer*) with a reference to the field of study, and students graduating in the fields of medicine, dental medicine or veterinary medicine are awarded a professional title of *diplomirani* with a reference to the field of study.
Students holding a second cycle professional degree can enter the labour market or apply for special admission, under additional conditions, to a postgraduate university programme.

8.6. Educational requirements for admission into study programmes
The minimum educational requirement for admission into undergraduate university programmes and professional programmes (first cycle) are set by higher education institutions. Normally, the minimum requirement for admission into undergraduate university programme is the completion of a four-year secondary school, while for enrolment into professional programme (first cycle) it is the completion of a three- or four-year secondary school.
The admissions process to first cycle programmes at Croatian universities normally requires students to present their secondary school grades and take an entrance examination. Each constituent unit of a university normally builds its own entrance examination. The admissions process to first cycle programmes at polytechnics and schools of professional higher education also uses secondary school grades and may use entrance examinations, but the use of entrance examinations is less common than in the case of universities.

7

The minimum educational requirement for enrolment into graduate university programmes is the completion of an undergraduate university programme. The university can allow students who have completed a professional programme to also enrol graduate university programmes, but they are allowed to set special requirements in these cases.
The minimum educational requirement for enrolment into specialist graduate professional programmes is the completion of an undergraduate university programme or a professional programme (first cycle).
The minimum educational requirement for enrolment into postgraduate programmes is the completion of an appropriate graduate programme. Normally, the requirement for enrolment into a postgraduate university programme is the completion of a graduate university programme. Students who have completed the pre-Bologna undergraduate programmes (*sveučilišni dodiplomski studij*) with a duration of minimum 4 academic years are allowed to apply for Bologna postgraduate programmes as well.

8.7. Grading scheme
The Croatian national grading scheme consists of five grades with numerical equivalents: izvrstan – 5 (outstanding); vrlo dobar – 4 (very good); dobar – 3 (good); dovoljan – 2 (sufficient); nedovoljan – 1 (insufficient - fail). The minimum passing grade is dovoljan – 2. There are no intermediate grades in the Croatian grading scheme.
The majority of higher education institutions in Croatia do not use a ranking system in assigning grades to students. Some institutions, however, may also use the ranking system and thus the ECTS grading scale in addition to the national grading scheme.

Source of information: Ministry of Science, Education and Sports of the Republic of Croatia (www.mzos.hr)

8

Figure 2.6: Example of Diploma Supplement.

The Ministry of Science, Education and Sports published Instructions for Issuing Diploma Supplements on July 9th 2008. The Instructions for Issuing Diploma Supplements were prepared in accordance with relevant legal regulations, activities of the Committee for the

Development of the Diploma Supplement Model, International Diploma Supplement models, analyses of Diploma Supplement models issued by Croatian higher education institutions, international instructions for the development of the Diploma Supplement, and comments of Croatian experts in the field of higher education.

The Diploma Supplement gives clear information to employers about the qualifications gained by students and basic data related to what they can expect from Bologna graduates. It contains a description of qualifications in terms of learning outcomes, a transcript of marks and a description of his/her success as well as expected results of learning after programme completion. Higher education institutions are given an opportunity to issue a detailed description of their curricula in addition to a diploma, whereby students can, upon graduation, explain without complication to any employer or higher education institution in Croatia and Europe exactly what kind of studies they have completed.

2.1.7. Previous Qualifications in Croatia

Education reform based on a shift from a content-based approach to a learning outcomes approach was first introduced with the Bologna Process. However, although qualifications awarded in Croatia before higher education reform have not been explicitly defined in terms of learning outcomes, they have been and they are still recognised nationally and internationally by the labour market and by higher education institutions providing further education.

2.1.8. Recognition of Foreign Qualifications in Croatia

Recognition of foreign primary, general and VET qualifications:
Foreign qualifications of primary or secondary education, parts of education and different types of professional qualifications as well as upgrades for certain jobs and professions are recognized by the Ministry of Science, Education and Sport based on the Act on Foreign Education Qualification Recognition (OG 158/03, 198/03, 138/06, 124/09 and 45/11) that has been in force in the Republic of Croatia since July 1st 2004. Agency for Vocational Education and Training and Adult Education as well as Education and Teacher Training Agency are responsible for foreign education qualification recognitions within their areas of competence.

Validation is a form of evaluating particular foreign education qualifications, by which the value of foreign primary or secondary education qualifications, professional qualifications and upgrades for certain jobs and professions, and of foreign education qualifications of a part of primary or secondary foreign education, issued by a foreign education institution which is recognized in the country of its issuing as a part of the country's educational system, is formally approved. Professional recognition implies the recognition of the equal legal validity of a foreign educational qualification and the corresponding educational qualification in the Republic of Croatia, with the purpose of making employment and/or further education possible in the Republic of Croatia.

If in the Republic of Croatia the profession acquired by foreign education qualification does not exist, the corresponding professional title of a related profession will be recognized by the foreign education qualification recognition procedure. Validation of a part of primary or secondary foreign education implies the equalization between that part of education and the appropriate part of primary or secondary education in the Republic of Croatia, with the purpose of continuing primary or secondary education in the Republic of Croatia.

This recognition equates foreign public documents with Croatian documents and makes the continuation of education possible in the corresponding grade of primary or secondary school in the Republic of Croatia.

Recognition of foreign HE qualifications:

Recognition of foreign higher education qualifications in the Republic of Croatia is carried out for the purpose of employment (professional recognition) or continuation of education (academic recognition).

By the coming into force of the Act on Amendments to the Act on Recognition of Foreign Educational Qualifications, procedures for academic recognition have been placed under the jurisdiction of appropriate institutions, i.e. Academic Recognition Offices within universities, polytechnics and colleges, while professional recognition has been under the authority of the Agency for Science and Higher Education, Croatian ENIC/NARIC Office. This change resulted in additional harmonisation with the principles of the 1997 Convention on the Recognition of Qualifications Concerning Higher Education in the European Region – the so-called Lisbon Convention (Council of Europe Treaty no. 165). The Croatian ENIC/NARIC Office founded within ASHE in 2005, is an information centre for academic mobility and recognition of foreign higher education qualifications. The scope of activities of the Croatian ENIC/NARIC Office is the professional recognition of foreign higher education qualifications, providing information about foreign education systems, and providing information about the national education system. The Office is a part of the European Network of National Information Centres on recognition and mobility (ENIC Network) and part of the National Academic Recognition Information Centres (NARIC network).

Both professional and academic recognition serve to assert the value of a given qualification. The professional recognition procedure comprises several steps. After receiving and processing an application, the Croatian ENIC/NARIC Office sends information on required supplements if the application is not complete. As soon as the application documentation is complete, the recognition procedure may commence. The complete application is sent, together with instructions issued by the Croatian ENIC/NARIC Office, for evaluation to an expert body for the area in question, which is obliged to submit its evaluation to Croatian ENIC/NARIC Office within 60 days. After receipt of the evaluation, the Croatian ENIC/NARIC Office forwards the application, together with the evaluation of the expert body, to the Agency for Science and Higher Education, which makes a final decision and issues a Decision on Recognition of Foreign Higher Education Qualification.

2.2. European Background

2.2.1. European Qualifications Framework

The development of the European Qualifications Framework for Lifelong Learning (EQF) commenced in 2004 in response to requests from Member States, social partners and other stakeholders for a common reference tool to increase the transparency of qualifications. An initial blueprint, proposing eight-level qualifications framework based on learning outcomes, was published by the European Commission and consulted upon in the latter half of 2005. The consultation demonstrated that there was widespread support for the initiative, and a revised text was adopted by the Commission as a proposal in September 2006. The proposal recommended the establishment of an overarching qualifications framework, which would serve as a translation device to make qualifications more comprehensible across different countries and systems in Europe. The core of the EQF consists of 8 qualification levels, described through learning outcomes (knowledge, skills and competencies).

The principal aims of the EQF are to make possible the comparison of qualification levels within national qualification systems in Europe and thus, to promote citizens' mobility between countries and to facilitate their lifelong learning. Particularly, in the capacity of the EQF to capture all kinds and levels of qualifications, regardless of where and how learning has taken place, the EQF is able to support lifelong learning. Moreover, it is only with the implementation of the EQF that EU countries may be treated as a single labour market and a homogenous territory for investment.

The formal adoption by the European Parliament and Council of Recommendation establishing the EQF was completed on April 23rd 2008[5]. The tasks for the 32 countries that cooperate in European educational policy, included:

- relating national qualifications levels to the EQF by 2010, in particular by referencing, in a transparent manner qualifications levels to the EQF levels set out in the Recommendation;
- adopting measures, as appropriate, so that by 2012 all new qualification certificates, diplomas and 'Europass' documents issued by competent authorities contain a clear reference, by way of national qualifications systems, to the appropriate EQF level.

The EQF Recommendation invites countries participating in the "Education and Training 2020" to refer their national qualifications levels to the EQF. To ensure that the referencing process is designed to be understood and trusted by stakeholders in all countries involved, the EQF Advisory Group agreed in March 2009 on a set of criteria and procedures to guide this process. These criteria aim to ensure that the information and documentation put into the public domain is validated by the competent authorities, is relevant, is transparent, can be compared and generates trust. Accordingly, the success of the EQF depends on the ability of countries to refer their qualifications systems and levels to the EQF in a demonstrable,

[5] The full text of the Recommendation can be downloaded at http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm. A summary brochure setting out the EQF level descriptors is available at: http://www.nqai.ie/documents/eqfleaflet.pdf.

explicit and defensible way; that means in a way that the information can be judged as valid or not by those not familiar with a country's qualifications (see the full listing of the 10 criteria/procedures agreed upon by the EQF Advisory Group in the Chapter 5.1.).

2.2.2. Qualifications Framework of the European Higher Education Area

Restructuring of higher education programmes and consequently, qualifications, is the core of the Bologna Process. The Ministers for Higher Education that gathered at the Bologna Conference in Berlin in 2003 called for the elaboration of an overarching Framework for Qualifications of the European Higher Education Area (QF-EHEA). Secondly, they called for the development of national frameworks of qualifications (NQF).

Subsequently, the QF-EHEA was adopted by European Ministers for higher education in Bergen in May 2005. In the Leuven/Louvain-la-Neuve Communiqué (2009) the Ministers stated that they "aimed at having national qualifications frameworks implemented and prepared for self-certification against the overarching QF-EHEA by 2012".

The QF-EHEA provides a mechanism for relating NQFs for higher education qualifications so as to enable international transparency, international recognition of qualifications and international mobility of students and graduates.

The three Bologna cycles, established through the Bologna Process, can be best understood by reference to internationally acceptable descriptors which have been developed jointly by stakeholders across Europe – the so-called Dublin Descriptors. These were developed by a group of European higher education specialists, and cover all three cycles, in addition to a short-cycle qualification (within or linked to the first cycle). Qualification descriptors are designed to be read as general statements of the typical achievement of learners who have been awarded a qualification upon successful completion of a cycle.

The success and acceptance of the referencing as well as of the self-certification process depends on trust and confidence amongst all stakeholders. The self-certification process needs equally to satisfy a series of criteria and procedures, including the designation of competent bodies responsible for the maintenance of the NQF by the national ministry responsible for higher education, a clear and demonstrable link between the qualifications in the NQF and the cycle qualification descriptors of the QF-EHEA, the existence of national quality assurance systems for higher education consistent with the Berlin Communiqué and any subsequent communiqué agreed upon by Ministers through the Bologna Process. Furthermore, the national framework and any alignment with the QF-EHEA, is to be referenced in all Diploma Supplements. The self-certification report must be made public so that partners in the Bologna Process are able to see the reasons that led competent national authorities to conclude the compatibility of their framework with the Bologna framework. A detailed outline of these criteria and procedures is included in the Chapters 5.2.1. and 5.2.2.

2.2.3. Rationale and Purpose of the Referencing of the CROQF to the EQF and the QF-EHEA

Both the EQF and the QF-EHEA are overarching frameworks designed to improve transparency of qualifications and support lifelong learning, transnational and international mobility.
As asserted by the Recommendation establishing the EQF, the QF-EHEA and the EQF are compatible so that the learning outcomes of certain EQF levels (levels 5 to 8) correspond to the cycle descriptors of the QF-EHEA.

Table 2.18: Corresponding EQF levels and QF-EHEA cycles.

EQF Levels	QF-EHEA Cycles
8	Third Cycle
7	Second Cycle
6	First Cycle
5	Short cycle within the first cycle[6]
4	
3	
2	
1	

The two meta-frameworks, the EQF and the QF-EHEA, have been developed through two different processes and with some differences in objectives, but they exist alongside and are compatible with one another. While the Bologna process intends to reform and build bridges between higher education systems in Bologna countries, the EQF enables referencing of national qualifications systems and facilitation of mutual understanding of all qualifications by the countries involved.

Having related its NQF to the EQF and the QF-EHEA, the Republic of Croatia has confirmed its involvement in the core of European integration processes. Since the beginning of development of the EQF, Croatia has participated in the initiative of development and implementation of the EQF, side by side with other Member States. In 2006 and 2007 Croatia actively participated in the EQF Implementation Preparatory Group established by the European Commission, and since 2008 has participated in the EQF Advisory Group.

Together with 46 other countries in Europe, Croatia has also participated in the higher education initiative within the National Correspondents.

This Report, as an outcome of the referencing process, is concerned with the referencing of the Croatian Qualifications Framework (CROQF) to the EQF and the QF-EHEA. Through the referencing process involving Croatian national authorities responsible for qualifications and stakeholders responsible for the development and use of qualifications, correspondence between the CROQF, EQF and QF-EHEA has been defined.

[6] The short cycle within the first cycle is not formally a part of the QF-EHEA but the Bergen Communiqué recognizes that national qualifications frameworks compatible with the QF-EHEA may include such qualifications.

The main purpose of the referencing and self-certification process reported in this document and the benefits for those having qualifications acquired in educational institutions in Croatia is threefold. Firstly, the referencing and self-certification process will significantly contribute to the quality assurance of the Croatian educational system by allowing its referencing and thus, comparison to other educational systems in Europe. Secondly, by having referenced its qualifications framework, Croatia facilitates its citizens and others that have been awarded Croatian qualifications both learning and working mobility throughout the wide European education area and European labour market. That means that students and graduates with Croatian qualifications may study and work abroad and have their qualifications fully recognised at the European level. Moreover, a part of the purpose of the referencing process is to enable the recognition of qualifications from other European countries in Croatia. Finally, this allows for Croatian citizens to be more competitive on the wide European labour market by enabling European employers to easily recognise Croatian qualifications.

The Referencing and self-certification report of the CROQF to the EQF and the QF-EHEA was presented at the fourteenth meeting of the Advisory Group of the EQF, 13-14 March 2012 in Brussels.

3. Croatian Qualifications Framework

3.1 Development of the CROQF

Although the idea had been conceived earlier, the development of the Croatian Qualifications Framework (CROQF) officially commenced in March 2006 when the Ministry of Science, Education and Sports formed the Committee for the Introduction of the CROQF, chaired by the Minister. Following consultations with numerous stakeholders[7], the Ministry sent the Baseline of the Croatian Qualifications Framework to the Government for adoption at the beginning of 2007 and proposed continued work on the development and the implementation of the CROQF. In July 2007, the Government adopted the Baseline of the CROQF. In September 2007 the National Committee for Development of the CROQF[8], and in May 2010 the National Committee for the Implementation of the CROQF[9] were established. In 2012 a new committee has been established – the Committee for the development of the CROQF Act and needed bylaws[10].

The first phase of the development of the CROQF has been denoted as:

- Orientation - signalling that Croatia is committed to the development of the CROQF in the given period.

The following phases are:

- Conceptual understanding;
- Design;
- Testing;
- Implementation; and
- Review of progress.

The phases following the initial implementation – *implementation* and *review of progress* – should be set up as a stable institutional phase of coordination and further development of the CROQF. To maximize efficiency, the phases overlap.

The fundamental documents arising during the first phase of activities (development) and laying the groundwork for further activities (implementation) are:

- *Baseline of the CROQF*[11] (including appendices[12]) – the document that laid down the main aims of the CROQF, the guiding principles for its development, and the key

[7] More than 10 workshops in 2006 and 2007, during the first phase of the CROQF development: Zagreb, Split, Rijeka, Osijek, Zadar, Dubrovnik, Bjelolasica.
[8] National Committee for the CROQF Development, see www.kvalifikacije.hr
[9] National Committee for the CROQF Implementation, available at: www.kvalifikacije.hr
[10] Committee for the development of the proposal of the CROQF Act and bylaws needed for development and implementation, available at: www.kvalifikacije.hr
[11] The Baseline of the Croatian Qualifications Framework, The Croatian Government, July 2007, Zagreb, available at: www.kvalifikacije.hr
[12] See www.kvalifikacije.hr

elements of the CROQF design including the Outline of the CROQF by reference levels;

- *Action Plan 2008-2012*[13] – a multi-annual and annual plan of activities for the development and implementation of the CROQF by 2012;
- *CROQF Concepts*[14] – concepts vital for understanding the CROQF development process, qualification elements and their basic properties;
- *Sectoral working groups (SWG)* – working groups for the development of occupational standards and required learning outcomes (25+1 – 25 SWGs and one SWG for interdisciplinary and other qualifications, and for horizontal harmonisation of all qualifications);
- *CROQF – Introduction to qualifications*[15] - a theoretical basis of the CROQF, providing fundamental information, guidelines and explanations for experts that are prerequisite for the understanding of key concepts – qualification and units/modules of learning outcomes and their properties/characteristics;
- *The CROQF Act*[16] - drafted in January 2011, reviewed in July 2011 and in 2012, and adopted in February 2013.

3.2 Role of the CROQF

National qualifications frameworks in different countries may have different roles and aims, even partially with respect to different parts of national qualifications systems. Implementation of national qualifications frameworks may vary across different sub-systems of education and training, depending on needed change and support for reform. Qualifications frameworks in different countries vary in the extent to which they intend to describe, reflect or change the existing national qualifications system. Qualifications frameworks also vary in the extent to which they cover qualifications systems or sub-systems. They may consist of sub-frameworks, such as frameworks for vocational education and training systems, frameworks for higher education, for general education or even a framework for separate non-formal and informal learning.

The Croatian Qualifications Framework (CROQF) coordinates and integrates all stakeholders in the qualifications system, paying attention to the needs of the labour market, the needs of individuals and society. The CROQF introduces a set of criteria, creating the basis for acceptable transparency, access, progression, award (including validation/assessment and recognition) and reliability of qualifications.

The CROQF has been developed for:

1. Better communication between stakeholders;
2. Reflection/classification of the existing system, including a description of old qualifications (with recognised learning outcomes) and facilitation of recognition of foreign qualifications;

---

[13] Action Plan, available at: www.kvalifikacije.hr
[14] CROQF Concepts, available at: www.kvalifikacije.hr
[15] CROQF – Introduction to Qualifications (Croatian and English), www.kvalifikacije.hr
[16] The CROQF Act, available in Croatian and Anglish at: www.kvalifikacije.hr

3. Pressures on national qualifications systems, influencing reforms, improving effectiveness, promoting the full use of learning outcomes, application of comprehensive quality assurance systems, and development of the recognition of non-formal and informal learning.

Reforms include full consideration of learning outcomes and assessment criteria and procedures, transparent processes of validation and registration of providers and awarding bodies. It is related also to the development and implementation of a system for the recognition of non-formal and informal learning, and the full application of a quality assurance system, which includes reaccreditation processes.

The general aim of the CROQF is the development of a knowledge-based society and social inclusion, the growth of a competitive economy and harmonized social development, the maintenance of democratic citizenship by promoting and facilitating lifelong learning, and the general mobility of citizens during their acquisition of qualifications and employment.

Specific objectives of the CROQF and principles guiding implementation and further development of the CROQF are:

- Ensuring conditions for high-quality education and learning according to needs for personal, social and economic development, social inclusion, as well as banishing all types of discrimination;
- Developing personal and social responsibility, as well as implementation of democratic standards in respecting basic freedoms and rights, as well as human dignity;
- Enhancing a role of key competences for lifelong learning;
- Developing qualifications based on learning outcomes that have been defined transparently;
- Understanding various qualifications and learning outcomes, as well as their correlations;
- Ensuring conditions for equal access to education during one's lifetime, for horizontal and vertical progression, acquiring of qualifications and their recognition;
- Ensuring the economic growth based on development of science and technology;
- Enhancing the competitiveness of the Croatian economy based on human potential;
- Achieving employability, individual and economic competitiveness as well as harmonised social development based on education;
- Setting up a coordinated quality assurance system for existing and future qualifications;
- Developing a system of recognition and validation of non-formal and informal learning;
- Establishment and sustainable development of partnerships among policy makers and stakeholders in the qualifications system;
- Easy readability and recognition of foreign qualifications in the Republic of Croatia and Croatian qualifications abroad;
- Participation in the European integration process by taking into account the markers and guidelines of the EQF and QF-EHEA, EU guidelines and international regulations;
- Preserving positive heritage of the Croatian education tradition;
- Enhancing and promoting education in the Republic of Croatia.

The CROQF classifies qualifications within 8 levels and additional sub-levels, as shown in Table 3.1.

Table 3.1: Levels and sub-levels in the CROQF

Levels	Sub-levels	Class of qualifications
8	8.2	Full
	8.1	*Partial*
7	-	Full and Partial
6	-	
5	-	
4	4.2	
	4.1	
3	-	
2	-	
1	-	

3.3 Main Concepts of the CROQF

As a base for a quality assurance system, there are three main concepts included in the CROQF:

- Occupational standards (key activities and required competencies for the workplace);
- Learning outcomes (organised within units/modules);
- Standards of qualifications (described by acquired learning outcomes, including assessment criteria and procedures), as a base for quality assurance and validation of non-formal and informal learning.

The following optimal, understandable and measurable classification of all acquired competencies has been adopted in the CROQF:

- Knowledge;
- Skills (cognitive, practical and social);
- Associated autonomy and responsibility.

As in the most of the national qualifications frameworks and in the European qualifications framework, knowledge refers to factual and theoretical knowledge. Factual knowledge may include terms, their definitions and descriptions and other similar forms of knowledge, that in and of themselves do not open up the possibility for the unequivocal creation of new information based on a limited number of existing pieces of information. Theoretical knowledge may refer to various theories, models, and other similar forms of knowledge that open up the possibility for the unequivocal creation of new, useful distinct pieces of information.

Skills are categorized as cognitive (logical and creative thinking), practical (manual dexterity and the use of previously known methods, instruments, tools, and materials), and social

(establishing and developing interpersonal relationships). Skills involve everything that facilitates adequate application of knowledge, regardless of whether this application refers to the speed and quantity of information processing, decision-making or physical reaction, to the behaviours and relationships with others within different social groups, or a combination of different skills.

Autonomy denotes the right to one's personal management, and constitutes the basis for determining one's responsibility, where responsibility denotes the commitment to carry out undertaken tasks, and is in line with the autonomy of execution and management.

A unit/module of learning outcomes denotes the minimal complete set of related learning outcomes. Knowledge and skills validated and positively assessed by a competent body, in accordance the associated autonomy and responsibility, are called learning outcomes.

(Standards of) Qualification (or generic qualification) encompasses a set of units/modules of learning outcomes of a certain reference level, volume, and profile, certified by a certificate or diploma or some other official document issued by a competent body.

Qualification means the formal outcome of an assessment and validation process, which is obtained when a competent body determines and certifies that an individual has achieved learning outcomes to given standards through the issue of a certificate or diploma. Qualification refers only to competencies that have been validated and assessed by the competent body.

The main elements of any qualification are learning outcomes, which are organized within units/modules of learning outcomes, giving a transparent structure to the qualification. Instead of an overall set of learning outcomes, in the CROQF units/modules of learning outcomes are used as main elements of the qualification.

A unit/module of learning outcomes denotes the minimum, but complete, set of related learning outcomes, with typically 5 to 10 learning outcomes.

3.4 Units/Modules of Learning Outcomes

The CROQF defines basic (complete and independent) characteristics/properties of qualifications and units/modules of learning outcomes as:

- Profile;
- Workload/volume;
- Reference level; and
- Quality, as an implicit part of qualifications and units/modules, denoting the reliability and credibility of the statement made by the official certificate (and/or other documents) about learning outcomes.

The reference level denotes the complexity of the acquired competencies, independent of other basic properties (volume, profile, and quality) and appears as most prominent in all qualifications frameworks.

Volume denotes the total amount of the acquired learning outcomes and is independent from other basic properties (reference level, profile, and quality).

Profile encompasses the field of work or study, the main role, profession, and other similar properties of learning outcomes, and is (like reference level and volume) independent from other properties (reference level, volume, and quality).

So, we define the minimal, but complete, set of information needed for any unit/module of learning outcomes as follows:

- Profile (indicated by a Title);
- Level (in accordance with level descriptors, 1 to 8);
- Workload/Volume (in ECTS, ECVET, CROGE or in years, any integer);
- Set of learning outcomes;
- Assessment criteria and procedures, as quality assurance elements, described by:
    - A set of assessment criteria (including examples of the assessment and linked to each learning outcomes);
    - Criteria for competent assessment body/institution; and
    - Criteria for competent assessor within the competent body.

Within the CROQF there is no room for a number of different quality standards measuring the same unit/module of learning outcomes. Different units/modules of learning outcomes, of course, have their own set of criteria, assessing/awarding bodies and competent assessors, including their own examples of assessment.

If it is supposed that within some specific unit/module of learning outcomes there are competencies, which could be assessed only within formal learning, then those requirements become a part of the assessment criteria of that specific unit/module. It means that in that case the only way for the assessment of achieved competencies is to follow full formal learning activities and assessments therein. Such examples can be found elsewhere (for example, health laboratory exercises). There will be always units/modules of learning outcomes important for society, which are only possible to assess as a part of the formal process of learning.

3.5 Workload/Volume and Profile

The workload/volume of a learning outcome is described as the effort of an average learner would need to acquire given competencies. It has been agreed that in describing the qualifications typically gained through higher education, the relevant time unit (1 ECTS) is a minimum of 25 hours (60-minute hours) for the acquisition of certain learning outcomes, including organized classes, independent study and assessment. Since an individual student may in practice take either more or less time for the acquisition of these competencies, the term “average successful student” is introduced. In other words, the time that an average student takes is estimated, taking into account only those students that have successfully acquired the given learning outcomes.

In vocational education and training, another credit system unit has been introduced: 1 ECVET, which represents between 15 and 25 hours for the acquisition of certain learning outcomes. Along the same lines as for the ECVET, a credit system for learning outcomes acquired through general education (i.e. primary and secondary school general education) has also been introduced (Croatian Credit for General Education (CROGE), or *Hrvatski bod općeg obrazovanja,* in Croatian (HROO)).

For original research activities within PhD studies, it is recommended to measure years of research required for an average full-time PhD student, although the volume of the taught part of the PhD programme can be described using ECTS credits.

The profile of a unit and qualification are described by learning outcomes and expressed by the title appropriately named by sectoral working groups. For the sake of transparency, all profile dimensions reflect the profile title, as well as the level.

3.6 Levels and Level Descriptors

Reference levels express the complexity and scope of acquired learning outcomes. In the CROQF there are 8 levels for units of learning outcomes (1 through 8) and an additional 2 sublevels for qualifications (1 through 8.2).

Levels and sublevels have been set out for the classification of qualifications (full and partial) resulting in a total of 10 qualification reference levels and sublevels. The reference level of a qualification is defined as the common level of all learning outcomes of the given qualification, determined by means of the level and volume of learning outcomes.

Table 3.2: Level (and sub-level) descriptors in the CROQF.

Level	Descriptors[17]	Sublevel	Additional descriptors/requirements for full qualifications
8	Descriptors from the Table 3.10: Level-8	8.2	Acquiring a qualification includes at least 3 years of scientific or artistic research in full-time equivalent, resulting in original articles with a relevant international peer review. Entry requirements: previously acquired level 7 qualification or higher.
		8.1[18]	Acquiring a qualification includes at least 1 years of scientific or artistic research in full-time equivalent, resulting in at least one published original article with a relevant international peer review. This is a partial qualification. Entry requirements: previously acquired level 7 qualification or higher.

[17] Descriptors are in Tables 3.3 to 3.10: Level-1 to Level-8.
[18] It is possible to progress from 8.1 toward 8.2. qualification in the same field.

7	Descriptors from the Table 3.9: Level-7	7	A total workload for acquiring a qualification is a minimum of 60 ECTS credits of the level 7 or higher level of units of learning outcomes. A total workload for the level 7 qualification, in addition to a previous level 6 qualification that is a precondition for access, is at least 300 ECTS credits. A minimum of 180 ECTS credits should refer to the level 6 or higher level of units of learning outcomes, respectively, and at least 60 ECTS credits should refer to the level 7 or a higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 4.2 or higher qualification in addition to passing the obligatory courses of the State Mature or a previously acquired level 6 or higher qualification.
6	Descriptors from the Table 3.8: Level-6	6	A total workload for acquiring a qualification is a minimum of 180 ECTS credits, with at least 120 ECTS credits of the level 6 or higher level of units of learning outcomes. Entry requirements: previously acquired level 4.2 or higher qualification in addition to passing the obligatory courses of the State Mature.
5	Descriptors from the Table 3.7: Level-5	5	A total workload for acquiring a qualification is a minimum of 120 ECVET or ECTS credits, with at least 60 ECVET or ECTS credits of the level 6 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 4.1 or higher qualification.
4	Descriptors from the Table 3.6: Level-4	4.2	A total workload for acquiring a qualification is a minimum of 240 ECVET and/or HROO credits, with at least 150 ECVET and/or HROO credits of the level 4 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.
		4.1	A total workload for acquiring a qualification is a minimum of 180 ECVET and/or HROO credits, with at least 120 ECVET and/or HROO credits of the level 4 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.
3	Descriptors from the Table 3.5: Level-3	3	A total workload for acquiring a qualification is a minimum of 60 ECVET and/or HROO credits of the level 3 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.

2	Descriptors from the Table 3.4: Level-2	2	A total workload for acquiring a qualification is a minimum of 30 ECVET and/or HROO credits of the level 2 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.
1	Descriptors from the Table 3.3: Level-1	1	A total workload for acquiring a qualification is a minimum of 480 credits. Entry requirements: None.

Eight reference levels are described by level descriptors, using competencies as dynamic combinations of knowledge, skills, and associated autonomy and responsibility. Some key competencies are explicitly indicated in the CROQF (e.g. in terms of autonomy and responsibility). However, the key competencies will be explicitly included in each qualification during the implementation and further development of the CROQF.

Level descriptors of units/modules of learning outcomes in the CROQF are shown in the following tables.

Table 3.3: Level 1 descriptors

Domain of competences	Level 1 descriptors
Knowledge	**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 of simple tasks in familiar situations.**

Table 3.4: Level 2 descriptors

Domain of competences	Level 2 descriptors
Knowledge	**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	**Realization of simple communication and cooperation in interaction with other individuals** in familiar 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**.

Table 3.5: Level 3 descriptors

Domain of competences	Level 3 descriptors
Knowledge	**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 specific field of work and/or learning in familiar situations;
Practical skills	Performing complex actions by applying a set of different simple methods, instruments, tools and materials in **partially** familiar conditions;
Social skills	Realization of complex communication in interaction with other individuals and possibility of cooperation in a **group** in familiar contexts;
Autonomy	Executing **a set** of complex tasks and **adapting one's own behaviour to set of given guidelines** in familiar situations;
Responsibility	Taking responsibility for **executing a set of complex tasks in familiar situations**.

Table 3.6: Level 4 descriptors

Domain of competences	Level 4 descriptors
Knowledge	**Analyzing 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** 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	Realization of **complex** communication in interactions with others and a possibility of cooperation in a group in social context that 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 improving activities** in situations that are usually predictable, but are subject to change.

Table 3.7: Level 5 descriptors

Domain of competences	Level 5 descriptors
Knowledge	**Analyzing, synthesizing 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 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**;
Social skills	**Partial management** of complex communication in interactions with others and establishing cooperation in a group in **partially unpredictable** social contexts;
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.

Table 3.8: Level 6 descriptors

Domain of competences	Level 6 descriptors
Knowledge	**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 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	Management 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.

Table 3.9: Level 7 descriptors

Domain of competences	Level 7 descriptors
Knowledge	**Evaluating highly specialised** knowledge in a field of work and/or learning some of which are at forefront 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.

Table 3.10: Level 8 descriptors

Domain of competences	Level 8 descriptors
Knowledge	**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 specialized activities and new** methods, instruments, tools and materials;
Social skills	**Creating and applying new social** and generally acceptable forms of communication 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**.

A qualification is allocated to a certain reference level only if all of the listed conditions have been met. The CROQF introduces sex levels of partial qualifications: 2, 3, 4, 5, 6 and 7, in addition to the sublevel 8.1. A precondition for acquiring partial qualifications is a minimum of 10 respective HROO, ECVET or ECTS credits, with a minimum of 50 % at a level of a respective partial qualification. Entry requirement to partial qualifications of level 2 to level 4 is a full qualification at level 1. Entry requirement to partial qualifications of level 5 is a full qualification at level 4.1, and for partial qualifications of level 6 and 7 is a full qualification at level 4.2 or higher.

3.7 Quality Assurance

Quality assurance denotes the system and procedures that an institution employs in order to maintain and continually perfect the agreed standards of its products and services. Quality

assurance could be referred to any sector and any level of complexity. Within a qualifications system, it is the process of ensuring that education, assessment, and certification of qualifications enable the achievement of excellence as required by a set of standards. Quality is one of the basic integral properties/characteristics of a qualification and units/modules, reflecting the reliability and validity of all the other characteristics of a qualification and units/modules. Standards ensure the transparency of relevant qualifications, which denotes the visibility and clarity of qualification content as a baseline for quality. Contents of both occupational standards and qualifications within learning programmes need to be comprehensible and understandable to the wider public, rather than only to experts.

Quality assurance is the focus of the CROQF and includes quality assurances of:

- Involvement of stakeholders and international and national experts (during development and implementation of the CROQF);
- Fit to purpose (labour market needs, and other purposes of qualifications, by standards of occupation and qualifications; validation; registration);
- Curricula;
- Assessment criteria and procedures; and
- Awarding criteria and procedures.

Three agencies for different educational sectors (higher education, vocational education and training and adult education, and general education) plays a major role for external quality assurance of education and training, including curricula development, assessment and awarding of qualifications.

Sectoral councils (25 sectors and one cross-sectoral or interdisciplinary) are advisory and professional bodies ensuring the development of human potential in line with labour market needs within respective sector, and their specific tasks are:

- Validate proposals of units of learning outcomes, occupational standards and qualifications standards;
- Analyse existing and required competences covered by a sector;
- Give recommendations to the National Council about admission policies, admission quota and financing of qualifications from public sources, by qualification and by county;
- Give recommendations to the ministry responsible for education and science about changes in qualifications standards based on changes detected in occupational standards;
- Give recommendations to the ministry responsible for labour about changes in the National Classification of Occupations;
- Propose recommendations for the sector development to the National Council;
- Follow and analyse implementation of recommendations given to the National Council;
- Propose the annual action plan and submit reports on its implementation to the National Council.

The National Council for Development of Human Potential is a central strategic body for the CROQF. Responsibility and specific tasks of the National Council are to:

- Assess and validate public policies, primarily policies related to education, employment, lifelong professional guidance and regional development, from a perspective of their influence on developing human potential and their contribution to achieving strategic goals and competitiveness of the Republic of Croatia, as well as developing society;
- Give recommendations on a process of planning and developing human potential according to a development strategy of the Republic of Croatia;
- Propose measures for integrated and harmonised polices related to employment, education and regional development;
- Monitor and validate the impact of the CROQF and respective qualifications, as well as give recommendations on how to better adjust education and labour market needs;
- Convey to the minister responsible for education and science its opinion on Sectoral council's recommendations referring to admission policy, admission quota and financing of qualifications from public sources, by qualification and by county;
- Monitor and validate Sectoral council's activities and give recommendations for improvement based on regular reports on Sectoral council's activities.

3.7.1. Involvement of Stakeholders and Experts

Involvement of relevant stakeholders, including international and national experts, has been the strategic basis for the successful development and implementation of the CROQF. National stakeholders and experts provide local insight into education, economic and institutional settings, while international experts lend their experiences with best international practices and lessons learnt. From the beginning of the development of the CROQF all relevant stakeholders have been involved, from the governmental institutions, unions, providers, students to private business sector.

All stakeholders are involved in the implementation and further development of the CROQF with the National Council and Sectoral councils.

3.7.2. Fit to Purpose

In the CROQF, quality of fit to purpose (labour market needs, and other purposes) focuses on:

- Development of unit/module-based occupational standards;
- Design of unit/module-based qualifications standards.

It is advisable that new occupational standards reflect not only the current labour market needs, but also the short- and long-term forecasts. Participation of the entire society and an extensive analysis of the current situation as well as future trends on the labour market are required for such a comprehensive and systematic approach to occupational standards development. Units/modules link qualifications standards (qualifications awards) to occupations.

3.7.3. Curricula

Development of curricula is based on qualifications standards and/or other similar documents that are the result of a clear overview of the needs for specific qualifications (awards). These needs generally refer to labour market needs and other needs of the individual and society for employment or further education.

The quality assurance of education is primarily carried out through the regular validation and accreditation/reaccreditation of institutions, as education providers. The validation process includes the evaluation of the quality of educational programmes for the qualifications an institution wishes to offer. The evaluation of curricula establishes the quality of education, methods and instruments, activities and resources that an institution has in place to guide and support learners towards the achievement of qualifications awards.

Quality of education is an element of quality assurance of a formal education system, and within the CROQF there are no additional requirements. The CROQF also intends to integrate the recognition of non-formal and informal learning, which means that the focus of quality assurance within the CROQF is on learning outcomes achieved, indicating a shift in focus to quality assurance of assessment and certification.

3.7.4. Assessment Criteria and Procedures

Quality assurance of assessment in the CROQF refers to the process of ensuring that assessments are:

- Fair;
- Valid; and
- Reliable.

Fairness refers to ensuring assessments do not either hinder or advantage a learner. *Validity* refers to ensuring that assessments measure what they claim to measure. *Reliability* refers to ensuring that assessment decisions are consistent and not influenced by irrelevant issues and circumstances.

Development of units/modules of learning outcomes (as a part of qualifications standards) determines appropriate assessment criteria and procedures, including methods and instruments, and appropriate profiles for assessors and institutions. It includes:

- Appropriateness of assessment criteria and procedures;
- Profile of assessors and competent institutions;
- Assessment materials developed for the national database, if needed.

Analyses of learners' results per institution, which is a part of the quality assurance system in the CROQF, will assist with identifying weaknesses in institutional provisions and provide a basis for audits. They should also assist with regard to the quality of assessments, and the quality of qualifications awards. These analyses become a cornerstone of the quality of the entire system, where the inclusion of employers and other stakeholders is crucial.

3.7.5. Awarding Criteria and Procedures

The quality assurance of awards is mainly administrative. It ensures that award is based on fair, valid and reliable assessment. Efficient and accurate recording, archiving, and reporting systems about learning outcomes achieved through assessments should be in place.

The design of qualifications (qualifications standards) determines awarding criteria and procedures, including appropriate profiles for competent awarding institutions/bodies.

3.7.6. CROQF Register

The CROQF introduces a new Register with 5 related databases:

- Units/modules of learning outcomes;
- Standards of occupations;
- Standards of qualifications (or generic qualifications);
- Programmes for validation of units of learning outcomes (including assessment providers);
- Programmes for acquisition of qualifications (including awarding institutions).

The CROQF Register is the basis for:

- A common robust quality assurance system;
- Validation of non-formal and informal learning (with equal value to formal learning);
- Transparency, access and progression, including mobility.

The CROQF Register represents the formal link between qualifications and the quality assurance system of the CROQF. It is envisaged that the Register encompasses all types of qualifications even those outside the formal education system, so that a good quality assurance system is the basis for the recognition of prior learning no matter how and where the learning has taken place.

3.8 Recognition of Non-formal and Informal Learning

An increasing number of European countries are emphasising the importance of bringing to light and valuing learning that takes place outside formal education institutions, for example, in leisure activities, at home or at work.

A system of Recognition of Prior Learning (RPL) is also developing within the CROQF, with the principle of equal value applied to the RPL as to in the recognition of formal learning. Accordingly, within the CROQF there is no room for different quality standards for the same set of learning outcomes, i.e. no separate assessment criteria and procedures, or separate criteria for competent institutions and competent assessors of learning outcomes achieved by formal learning on one hand, and any other type of learning on other hand. The assessment criteria of the unit/module is standardised for learning outcomes achieved through formal as well as through any other type of learning. Different units/modules of

learning outcomes, of course, have their own set of assessment criteria and procedures, competent institutions and assessors, including their own examples of assessment.

If it is supposed that within a specific unit there may be a set of learning outcomes which are possible to assess only within formal learning activities and formal conditions, then those requirements become a part of the assessment criteria of that specific unit. This means that in this case the only means for assessment is the following of full formal learning activities and assessments therein. There are some such examples, namely some sets of learning outcomes, important for society, which can only be assessed as part of formal learning processes.

Detailed criteria and procedures for the system of RPL in the CROQF will be developed, tested and implemented within the next phase of CROQF development and implementation.

4. Referencing and Self Certification of the CROQF to the EQF and QF-EHEA

4.1. General Policy Approach

The principal aim of the EQF is to make possible the comparison of qualifications levels amongst national qualifications systems in Europe and thus, to promote citizens' mobility between countries and to facilitate their lifelong learning. Particularly in the capacity of the EQF to capture all kinds and levels of qualifications, regardless of where and how learning has taken place, the EQF is able to support lifelong learning. Moreover, it is only with the implementation of the EQF that the EU countries may be treated as a single labour market and as a homogenous territory for investment. Consequently the EQF has become the major instrument for the reform of national education and training systems.

As endorsed by the Recommendation of the European Parliament and of the Council of April 23rd 2008 for the establishment of the European Qualifications Framework for lifelong learning[19], Member States were invited to relate their national qualifications systems to the EQF by 2010, in particular by referencing, in a transparent manner, their qualification levels to the levels set out by descriptors defining levels in the EQF.

Moreover, Member States should adopt measures so that, by 2012, all new qualification certificates, diplomas and *Europass* documents contain a clear reference to appropriate EQF levels using an approach based on learning outcomes when defining and describing qualifications.

Being a candidate country, and now a member, for the EU and having joined the cooperation amongst EU Member States in the field of education through the Open Method of Coordination, the Republic of Croatia has committed itself to join the overarching process of relating its NQF both to the EQF and to the QF-EHEA. In addition, having signed the Bologna Declaration already in the year 2001, Croatia has been exchanging experiences and co-developing the design of the European Higher Education Area for over ten years now.

Since the beginning of the development of the EQF, Croatia has participated in this initiative, side by side with other Member States. In 2006 and 2007, Croatian NQF experts actively participated in the EQF Implementation Preparatory Group (EQF IPG) established by the European Commission, and since 2008, in the EQF Advisory Group.

In order to assess to what extent curricula are drawn on the basis of learning outcomes, in compliance with the Criteria and procedures for referencing national qualifications levels to

[19] See http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm

the EQF (Criterion No.3), qualifications need to be analysed in terms of learning outcomes in order to relate qualifications to the CROQF and consequently to the EQF.

4.2. Structures – Bodies and Responsibility

The main bodies being established for the development and implementation of the CROQF were the National Committee for Implementation of the CROQF and its Expert Team appointed by the Minister of Science, Education and Sports (MSES). The CROQF Expert Team, together with the MSES, lead the process of the development and implementation of the CROQF until the development of a legal and institutional framework.

According to the CROQF Act, specific bodies established for the implementation of the CROQF includes:

- the National Council for Development of Human Potential;
- the ministry responsible for education and science;
- the ministry responsible for labour;
- the ministry responsible for regional development;
- Sectoral councils (25 sectoral and one cross-sectoral).

The National Council for Development of Human Potential is a central strategic body for the CROQF development. It consists of a president and 24 members from all relevant stakeholders.

Following the Recommendations on establishing the EQF, Croatia designated the Ministry of Science, Education and Sports as the National Coordination Point (NCP) in order to support and guide the relationship between national qualifications systems and the EQF as well as to oversee the referencing process.

The tasks of the NCP include:

- Adopting guidelines for the development of qualifications standards;
- Developing and maintaining the IT system for management of the CROQF Register;
- Referencing of the CROQF to the EQF and self-certification of the CROQF against the QF-EHEA;
- Monitoring implementation and development of other countries' national qualifications frameworks, those referenced and not referenced to the EQF and those self-certified and not self-certified against the QF-EHEA;
- Monitoring and analysing implementation and development of qualifications frameworks in other countries' education policies;
- Establishing and coordinating the work of Sectoral councils composed of key stakeholders according to criteria stipulated by the Act;
- Coordinating quality assurance related to qualifications and learning outcomes, in line with the provision under the Act;
- Developing a system for recognition and validation of non-formal and informal learning;

- Monitoring and analysing implementation of the system for validation of learning outcomes acquired through non-formal and informal learning and proposing measured for its regulations;
- Adopting guidelines and preparing other material required for implementation and development of the CROQF;
- Informing the public about technical issues related to the CROQF;
- Administrative support to the National Council;
- Developing the role of the CROQF in procedures related to recognition and identification of qualifications.

Tasks of the ministry responsible for labour include:

- Establishing and developing a system of information collection about current and future market needs and required competences;
- Collecting data about changes in competences required for occupations and proposing developments of qualifications standards and occupational standards according to labour market needs;
- Participating in preparation and elaboration of strategic background material, as well as analysis for developing the CROQF, aimed at enhancing employability and raising competitiveness of the Croatian economy and society;
- Preparing and elaborating analytical background material and methodology for elaboration of occupational standards and managing the Sub-register of occupational standards;
- Monitoring the employability of persons with acquired qualifications.

Tasks of the ministry responsible for regional development include:

- Adopting guidelines for the development of regional labour market;
- Monitoring the effects of population's qualification structure on regional development;
- Analysing demands for human resources development resulting from countries' /regions' development strategies.

Sectoral councils are advisory and professional bodies ensuring the development of human potential in line with labour market needs within respective sector. Each Sectoral council has a president and 10 members (ministry from respective sector, the Croatian Employment Service, agency for quality assurance, and sectoral experts) appointed for a 4-year period.

4.3. The Referencing and Self-Certification Process

The Referencing and Self-Certification Report of the Croatian Qualifications Framework to the European Qualifications Framework for lifelong learning and to the Qualifications Framework of the European Higher Education Area is the single, comprehensive report setting out how the qualifications framework in the Republic of Croatia, CROQF, is referenced to the EQF. It was drafted by the Working Group of the CROQF Expert Team, guided and assisted by a team of international experts, extensively and intensively discussed

with a wide group of stakeholders and social partners and finally, adopted by the Ministry of Science, Education and Sports.

From the early beginning of the development of the CROQF, the role of stakeholders was strongly emphasised. Stakeholders have been involved in the process of development of the CROQF and have been continuously consulted at all stages. The CROQF has been presented and discussed during the workshops, meetings and round tables since 2006 (a full list of events is available on the CROQF web-site, www.kvalifikacije.hr).

The referencing process, in compliance with the Criteria and Procedures for Referencing National Qualifications Levels to the EQF (Criterion No.7), involved five international experts:

- Mr. Sjur Bergan, Head of Department for Higher Education and Science in the Council of Europe;
- Prof. Ewa Chmielecka, PhD, Advisor of the Prime Minister of Poland and Coordinator for developing the Polish NQF and member of the EQF Advisory Group;
- Meta Dobnikar, PhD Head of Higher Education Section of the Slovenian Ministry of Higher Education, Science and Technology;
- Mr. Michael Graham from the European Training Foundation; and
- Mr. Eduard Staudecker from the Austrian Federal Ministry of Education, Art and Culture and the Austrian representative in the EQF Advisory Group.

The main task of the international experts was to assist the Referencing Working Group in drafting the National Referencing and Self-certification Report.

The role of the international experts was two-fold, firstly to assure the credibility of the referencing process and secondly, to examine the Croatian qualifications system from the point of view of an outsider and provide an objective review of the referencing process.

Croatia decided to carry out the referencing process and the self-certification process as a single exercise, using the same structure and the methodology. The referencing and self-certification process formally started with the completion of the first proposal for a basic legislative framework for the implementation of the CROQF, i.e. with drafting of the Proposal of the CROQF Act, and finalised after the adoption of the Act.

Development of the Croatian Referencing Report was then built on research, expert advice, stakeholder involvement and widespread consultation with social partners.

After undertaking comprehensive research on the referencing of national qualifications frameworks to the EQF, the Working Group agreed on the main outcomes and the structure of the Report and prepared its first draft in January 2011, having its first meeting with the international experts, with the objective to receive international experts' comments and guidelines for the further elaboration of the Referencing Report.

The Referencing Report was revised and then sent to international and national experts on qualifications frameworks for review. At the second meeting of national and international experts in March 2011, feedback on the Referencing and Self-certification Report was received.

The meeting of experts in March was followed by the National Conference on the Referencing of the CROQF to the EQF and the QF-EHEA, gathering national and international experts, as well as a wider group of stakeholders and social partners, including employer and trade union representatives, a range of government bodies, Croatian Parliament Committees, non-governmental institutions, education and qualification agencies, quality assurance bodies, research community, education providers and learner representatives.

Subsequently, as response to the need for more comprehensive consultations with relevant stakeholders, a national workshop was organised in July 2011 for the in-depth discussion of certain elements of the Draft proposal of the Law on CROQF and the draft of the Referencing and Self-Certification Report. Around 120 participants representing all relevant stakeholders gathered together and, divided into four thematic working groups (A – general part of the Report; B – general education; C – vocational education and training; D – higher education), provided their proposal for further the development and revision of the draft Report.

Furthermore, the International Conference on Referencing of the Croatian Qualifications Framework (CROQF) to the EQF and to the QF-EHEA was organized in October 2011.

During this extensive consultation process, the draft Referencing and Self-certification Report was continuously revised taking into account comments from stakeholders and national and international experts.

Following this process, in compliance with the Criteria and Procedures for Referencing National Qualifications Levels to the EQF (Criterion No. 8), the final Referencing and Self-certification Report was certified by the competent national body, the Ministry of Science, Education and Sports as well as by the accreditation body in Higher Education, the Agency for Science and Higher Education.

The comprehensive national report, setting out the referencing and the evidence supporting it and addressing separately each of the ten criteria, published by the Ministry of Science Education and Sports is available in electronic version on the web site of the Government of the Republic of Croatia[20], on the web site of the Ministry of Science, Education and Sports, the EQF National Coordination Point[21] and on the CROQF portal[22]. It will be transmitted to the competent bodies with a request to include it on the web sites of the EQF and the QF-EHEA.

The Referencing and self-certification report of the CROQF to the EQF and the QF-EHEA was presented at the fourteenth meeting of the Advisory Group of the EQF, 13-14 March 2012 in Brussels.

[20] See http://www.vlada.hr/aktualne_teme_i_projekti/aktualne_teme/hko_hrvatski_kvalifikacijski_okvir
[21] See http://www.mzos.hr
[22] See www.kvalifikacije.hr

4.4. Communication and Consultation Process with Stakeholders

Communication and consultation with a wide group of stakeholders has been a key feature of the development and implementation of the CROQF. In order to assure the credibility of the referencing process, stakeholders in charge of qualifications and certification processes and those utilising qualifications such as employers and learners/students have been consulted at different levels and by different means.

Firstly, the Government Committee for Implementation of the CROQF includes stakeholders responsible for and/or having interest in the area of science and education, in order to link education with needs of the market, individuals and society as a whole. The following groups of stakeholders are represented in the CROQF Committee and will continue to be represented in the future CROQF Council, envisaged by the draft Law on the CROQF:

- Stakeholders responsible and/or accredited for education;
- Stakeholders responsible and/or accredited for entrepreneurship, trades and crafts, as well as for the labour market and employment;
- Trade unions;
- Employers;
- Non-governmental organisations;
- Other individuals and legal entities.

The consultation structures and processes established on the occasion of development of the legislative framework for the CROQF were equally utilised during the referencing process. These include:

- Cooperation and involvement of national and international experts and stakeholders' representatives at the level of the CROQF Expert Team, established by the Minister of Science, Education and Sports during a series of meetings and workshops (please see the list of workshops on the CROQF web-site);
- Discussions and negotiations at the level of the CROQF Committee established by the Government of the Republic of Croatia and consisting of all stakeholders' representatives (please see the summary minutes from the CROQF Committee meetings on the CROQF web-site);
- Inter-service consultations and certification by the competent national bodies, the Ministry of Science, Education and Sports as the national authority for qualifications and the Agency for Science and Higher Education as the Quality Assurance Agency;
- Formal consultation with the relevant governmental bodies and the adoption of the main CROQF documents by the Government of the Republic of Croatia;
- Consultations and debates between relevant stakeholders arising during workshops and seminars of the Working Groups developing standards of qualifications;
- Widespread public discussion with a wider group of stakeholders and social partners, including employer and trade union representatives, education providers and learner representatives at the national and international conferences.

Cooperation between stakeholders is emphasised in all elements of the CROQF. Most particularly, good cooperation was established during the development of the first Standards of Qualifications.

Examples of standards of qualifications are being developed by the Sectoral Working Groups established by the Minister of Science, Education and Sports and guided and monitored by the CROQF Expert Team within different projects.

An initial boost was given by the IPA project *Further Development of the CROQF* that set the stage for the work of the first 9 Sectoral Working Groups. A series of workshops took place gathering representatives from education and the labour market, public and private sectors, governmental and non-governmental institutions. The groups worked together to develop the first standards of qualifications that would, after being discussed with all stakeholders, be reviewed by the Expert Team and approved by the relevant bodies, would finally enter the CROQF Register of standards of qualifications.

The greatest challenge during the drafting of the standards of qualifications was the definition of learning outcomes. Education providers and representatives of the labour market sat together to review the existing curricula and to develop standards of qualifications that would better fit labour market needs.

The draft standards of qualifications was additionally reviewed by the independent experts and submitted to the CROQF Expert Team and to the Ministry of Science, Education and Sports.

The result of this exercise was a set of standards of qualifications developed by 9 Sectoral Working Groups. The expected impact is an overall revision of existing curricula in accordance with developed Standards of Qualifications.

4.5. Self-Certification of the CROQF against the QF-EHEA

4.5.1. Types of Higher Education Degrees

As described earlier in the Report, higher education is provided through university and professional studies. University studies are provided at universities while professional studies are provided at universities, polytechnics and schools of professional higher education.

University degrees qualify students for jobs in science and higher education, the business community, public sector and society in general, as well as train them for developing and applying scientific and professional achievements. Degrees are awarded following the completion of accredited programmes within recognised institutions of higher education. University degrees include three levels: undergraduate, graduate and postgraduate.

Undergraduate university degrees correspond to the first cycle of QF-EHEA and level 6 of CROQF. These degrees are awarded following the completion of accredited programmes lasting three to four years and students are required to earn minimum of 180 or 240 ECTS credits, respectively. Upon completion students are awarded the academic title and

corresponding qualification *sveučilišni prvostupnik* or *sveučilišna prvostupnica (baccalaureus /baccalaurea)* with reference to their specialisation (e.g. *sveučilišni prvostupnik / sveučilišna prvostupnica (baccalaureus /baccalaurea) fizike - univ. bacc. phys*.). Holders of the CROQF level 4.2 degrees may be granted entry into a programme. Upon completion students may continue their studies at graduate university study or specialist professional graduate study, or enter the labour market.

Graduate university degrees correspond to the second cycle of QF-EHEA and level 7 of the CROQF. These degrees are awarded following the completion of accredited programmes lasting one to two years and students are required to earn minimum of 60 or 120 ECTS credits, respectively. Some graduate programmes are integrated and students are required to earn a minimum of 300 ECTS (for. ex Law) or 360 ECTS (Medicine, Veterinary medicine, Dental medicine). Otherwise, students are required to earn a minimum of 300 ECTS credits with in first cycle the qualification of QF-EHEA, specifically with a minimum of 180 credits at level 6 or higher of CROQF, including a minimum of 60 ECTS credits at level 7 higher level of CROQF. Upon completion students are awarded the academic title and corresponding qualification *magistar* or *magistra* with reference to a specialisation (e.g. *magistar inženjer / magistra inženjerka građevinarstva - mag. ing. aedif.*), or *doktor* or *doktorica* in Medicine / Dental medicine / Veterinary medicine (e.g. *doktor/doktorica veterinarske medicine - dr. med. vet*). Entry into integrated programmes or undegraduated degrees, both university and professional, may be granted to holders of CROQF level 4 degrees (usually secondary schools lasting at least 4 years) (60-120 ECTS credits). Upon completetion students may continue their studies at postgraduate university study, graduate university studies – specialist, or enter the labour market.

Graduate university degrees – specialist correspond to the second cycle of QF-EHEA and level 7 of the CROQF. These degrees are awarded following the completion of accredited one to two year study programmes and students are required to earn minimum of 60 or 120 ECTS credits, respectively. Upon completion students are awarded the academic title and corresponding qualification *sveučilišni specijalist* or *sveučilišna specijalistica* in a certain field (e.g. *sveučilišni specijalist / sveučilišna specijalistica poslovne ekonomije - univ. spec. oec.*) or *sveučilišni magistar or sveučilišna magistra* of Medicine, Veterinary medicine, Dental medicine in a specific field (e.g. *sveučilišni magistar / sveučilišna magistra kliničke pedijatrije - univ. mag. med.*). Entry into a programme may be granted to holders of degrees at CROQF level 7. This degree is usually part of lifelong learning educational path of employed persons who have already completed graduate university studies or specialist professional graduate study and continue their education in a certain field.

“Magistar znanosti” study does not exist in the actual higher education system in Croatia. These degrees correspond to the third cycle of QF-EHEA and sub-level 8.1 of the CROQF. These programmes require a minimum of one year of original either scientific or artistic research. Upon completion of an accredited study programme students are awarded the academic title and corresponding qualification *magistar* or *magistra znanosti* usually with reference to a specific field (e.g. *magistar / magistra znanosti iz polja strojarstva*). Entry into a programme may be granted to holders of university degrees at the CROQF level 7. Upon completion students may continue their studies at postgraduate (doctorate) university study

or enter the labour market. The qualification related to this degree is classified as a partial class in both, the CROQF and the QF-EHEA.

Postgraduate university degrees correspond to the third cycle of the QF-EHEA and sublevel 8.2 of the CROQF. They require a minimum of three years of original either scientific or artistic research. Upon completion students are awarded the academic title and a corresponding qualification *doktor* or *doktorica znanosti* (e.g. *doktor or doktorica znanosti iz polja filozofje - dr.sc.)*. ECTS credits are used for taught courses but are not specified for research. Still, in practice ECTS credits are used to measure volume of learning or research outcomes. Entry into a programme may be granted to holders of university degrees at level 7 or sublevel 8.1 of the CROQF.

Professional degrees offer students the appropriate level of knowledge and skills enabling them to perform professional occupations, and train them for direct entry into the labour market. Professional degrees include three CROQF levels: professional undergraduate - short cycle, professional undergraduate degree and specialist professional graduate.

Professional undergraduate degrees correspond to the first cycle of the QF-EHEA and either level 5 (short cycle) or level 6 of the CROQF. These degrees are awarded following completion of accredited programmes lasting two to three years and students are required to earn 120 or 180 ECTS, respectively. Exceptionally, following the approval of the National Council for Higher Education, professional study may last up to four years during which students are required to earn to 240 ECTS credits. This degree is compatible with completion of the Bologna first cycle. Upon completion of professional study with less than 180 ECTS, the awarded degree corresponds to the QF-EHEA short cycle and level 5 of the CROQF. Students are awarded the professional title and a corresponding qualification *stručni pristupnik* or *stručna pristupnica* with reference to their specialization (e.g. *stručni pristupnik / stručna pristupnica brodogradnje - pristup. nav. arch.*). Upon completion of a professional programme with a minimum 180 ECTS, students are awarded the professional title and corresponding qualification *stručni prvostupnik* or *stručna prvostupnica (baccalaureus /baccalaurea)* with reference to a specialisation (e.g. *stručni prvostupnik /stručna prvostupnica (baccalaureus/baccalaurea) informatike - bacc. inf.*). Entry into a programme may be granted to holders of the CROQF level 4.2 degrees, or level 4.1 or higher for some profiles as set out in the qualification standards. Upon completion students may continue their studies at specialist professional graduate study or graduate university study, or enter the labour market.

Specialist professional graduate degrees correspond to the second cycle of the QF-EHEA. These degrees are awarded following the completion of accredited one or two year programmes and students are required to earn a minimum of 60 or 120 ECTS credits, respectively. Specialist professional graduate degrees correspond to level 7 of the CROQF if students are required to earn a minimum of 300 ECTS credits within the first and second cycle qualification of the QF-EHEA, specifically with a minimum of 180 credits at level 6 or higher of the CROQF including a minimum of 60 credits at level 7 or higher of the CROQF. Otherwise, these degrees correspond to the CROQF level 6. Upon completion students are awarded the title and corresponding qualification *stručni specijalist* or *stručna specijalistica* in a certain field (e.g. *stručni specijalist /stručna specialistica kriminalistike - struč. spec.*

crim.) or *diplomirani* or *diplomirana* in the fields of Medicine /Dental medicine /Veterinary medicine (e.g. *diplomirani /diplomirana fizioterapeut – dipl. physioth.*). Entry into a programme may be granted to holders of undergraduate degrees, both university and professional. Upon completion students can continue their studies at graduate university study – specialist or enter the labour market.

The entry requirements for all levels of university and professional studies are determined by the higher education institutions themselves. Higher education institutions autonomously determine conditions for admission into second cycle programmes after the completion of either university or professional first cycle programmes. Even for the same profile of studies, they may set additional courses and exams as requirements for students who are transferring from professional to university studies (courses usually focus on the development of research skills or theory-based knowledge) or from university to professional studies (courses usually focus on the development of practical skills).

State Matura (*Državna matura*) is a compulsory, final written exam of general education at the end of secondary school. The goal of the State Matura is the assessment and validation of pupils' knowledge, skills and competence achieved during primary and secondary education in accordance with educational plans and programmes. Based on the results of the State Matura exam, a pupil's knowledge is objectively and fairly assessed. In this way it is possible to compare the grades of all pupils in the Republic of Croatia, thus enabling fair entry into further education and employment. By passing the State Matura, pupils from general secondary schools are awarded a secondary school qualification, and analogous pupils from secondary vocational and art schools are awarded a secondary vocational qualification.

The State Matura is provided by an independent national body of the NCEEE in collaboration with schools. The body carries out external assessment of the educational system of the Republic of Croatia as well as exams based on national standards. The State Matura is provided on the same day throughout the Republic of Croatia, at the same time, under the same conditions and criteria for all pupils. The organisational procedure of the State Matura is strictly defined.

The State Matura consists of compulsory and elective parts. Exams from the compulsory part may be at two levels: A – advanced and B – basic. There are three compulsory exams and an optional number of elective exams.

Higher educational institutions accept the State Matura as entry exams but have autonomously determinate whether additional examinations may be required as part of the admission procedure.

A pupil successfully passes the State Mature if he/she passes four classes of secondary education and the three compulsory Matura exams. After successfully passing the State Matura pupils from general secondary schools are awarded a certificate of completion (*svjedodžba o državnoj maturi)*. For successfully passing elective exams they are awarded a certificate. Pupils from secondary vocational and art schools are awarded a certificate for

passing either the compulsory or elective part of the State Matura (*potvrda o položenim ispitima državne mature*).

4.5.2. Self-Certification of the CROQF against the QF-EHEA

The self-certification process is undertaken according to the criteria set by the QF-EHEA. A detailed explanation of the fulfilment of criteria is explained in Chapter 5. During referencing a clear comparison of QF-EHEA level descriptors with both CROQF level descriptors and descriptors of qualification is demonstrated (Table 4.1). CROQF levels and sublevels related to higher education qualifications are: 5, 6, 7, 8.1 and 8.2. The most relevant CROQF descriptors (knowledge, skills, responsibility and autonomy) are matched against each QF-EHEA level descriptor. The underlined keywords demonstrate the equivalence of the CROQF descriptors of qualification to QF-EHEA level descriptors.

Tables 4.2 and 4.3 show the referencing of university and professional degrees to the QF-EHEA cycles. The tables clearly demonstrate how CROQF higher education degrees correspond to QF-EHEA cycles according to the minimal amount of required ECTS of learning outcomes at a certain level.

Following the introduction of Bologna principles, the "magistar znanosti" degree does not exist in the actual higher education system in Croatia. However, since the qualifications which are awarded after completion of these programmes has been present on the labour market, they are considered and the CROQF consequently includes two corresponding sublevels at level 8. Learning outcomes of postgraduate masters programmes certainly match those indicated at CROQF level 8. Sublevel 8.1 corresponds to the qualifications usually awarded after the completion of these programmes. In this way they are clearly differentiated from doctoral qualifications which require a minimum of three years of original scientific or artistic research. During the referencing process it is recognised that postgraduate masters degree and the corresponding qualification *Magistar znanosti* is a partial qualification referenced to EQF level 8 and to the QF-EHEA third cycle. The level of learning outcomes is compatible with learning outcomes relevant to qualifications at EQF level 8 (see Table 4.1). With regard to the QF-EHEA, qualifications are matched with the Bologna third cycle, with a minimum of one year of research corresponding to EQF level 8 learning outcomes (see Table 4.2).

Table 4.1: Referencing of CROQF levels to the QF-EHEA

*Qualifications that signify completion of **the short cycle** (QF-EHEA) are awarded to students who:*	*Qualifications that signify completion of studies at the **CROQF level 5** are awarded to students with the following competencies:*	*Descriptors of qualification level 5 as set out in the CROQF:*
have demonstrated knowledge and understanding in a field of study that builds upon general secondary education 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	**Knowledge**: Analyzing, synthesizing 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.	A total workload for acquiring a qualification in higher education at level 5 is a minimum of 120 ECTS credits, with at least 60 ECTS credits of the level 6 or higher level of units of learning outcomes. Entry requirements: previously acquired level 4.1 or higher qualification.
can apply their knowledge and understanding in occupational contexts	**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 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. **Social skills:** Partial management of complex communication in interactions with others and establishing cooperation in a group in partially unpredictable social contexts.	
have the ability to identify and use data to formulate responses to well-defined concrete and abstract problems	**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 ability to transfer knowledge to other areas and problems.	
can communicate their understanding, skills and activities, with peers, supervisors and clients	**Social skills:** Partial management of complex communication in interactions with others and establishing cooperation in a group in partially unpredictable social contexts. **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.	
have the learning skills to undertake further studies with some autonomy	**Knowledge**: Analyzing, synthesizing 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 ability to transfer knowledge to other areas and problems. **Autonomy:** Taking part in the management of activities in partially unpredictable conditions.	

*Qualifications that signify completion of **the first cycle** (QF-EHEA) are awarded to students who:*	*Qualifications that signify completion **CROQF level 6** are awarded to students with the following competencies:*	*Descriptors of qualification level 6 as set out in the CROQF:*
have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study;	**Knowledge**: 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 ability to transfer knowledge to other areas and problems.	A total workload for acquiring a qualification is a minimum of 180 ECTS credits, with at least 120 ECTS credits of the level 6 or higher level of units of learning outcomes. Entry requirements: previously
can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competencies typically demonstrated through devising and sustaining arguments and solving problems within their field of study;	**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 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.	

have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues;	**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 ability to transfer knowledge to other areas and problems. **Autonomy:** Managing professional projects in unpredictable situations.	acquired level 4.2 or higher qualification in addition to passing the obligatory courses of the State Mature.
can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences;	**Social skills:** Management 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.	
have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy.	**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 ability to transfer knowledge to other areas and problems. **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.	

*Qualifications that signify completion of **the second cycle** (QF-EHEA) are awarded to students who:*	*Qualifications that signify completion of studies at **level 7** are awarded to students with the following competencies:*	*Descriptors of qualification level 7, as set out in the CROQF:*
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 context;	**Knowledge**: Evaluating highly specialised knowledge in a field of work and/or learning some of which are at forefront 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.	A total workload for acquiring a qualification is a minimum of 60 ECTS credits of the level 7 or higher level of units of learning outcomes. A total workload for the level 7 qualification, in addition to a previous level 6 qualification that is a precondition for access, is at least 300 ECTS credits. A minimum of 180 ECTS credits should refer to the level 6 or higher level of units of learning outcomes, respectively, and at least 60 ECTS credits should refer to the level 7 or a higher level of units of learning
can apply their knowledge, understanding and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study;	**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. **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.	
have the ability to integrate knowledge and handle complexity, and to formulate judgments with incomplete or limited information, that include reflection on social and ethical responsibilities linked to the application of their knowledge and judgments;	**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. **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.	

can communicate their conclusions and the knowledge and rationale underpinning these, to specialist and nonspecialist audiences clearly and unambiguously;	**Social skills:** Managing and leading a complex communication process, interactions with others and cooperation in different social groups in unpredictable social situations.	outcomes, respectively. Entry requirements: previously acquired level 4.2 or higher qualification in addition to passing the obligatory courses of the State Mature or a previously acquired level 6 or higher qualification.
have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.	**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. **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.	

*Qualifications that signify completion of **the third cycle** (QF-EHEA) are awarded to students who:*	*Qualifications that signify completion of studies at **CROQF sublevels 8.1 and 8.2** are awarded to students who:*	*Descriptors of qualification sublevels 8.1 and 8.2 as set out in the CROQF:*
have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field;	**Knowledge**: Creating and evaluating new facts, concepts, procedures, principles and theories in a field of research that extends the frontier of knowledge.	**level 8.1** Acquiring a qualification includes at least 1 years of scientific or artistic research in full-time equivalent, resulting in at least one published original article with a relevant international peer review. This is a partial qualification. Entry requirements: previously acquired level 7 qualification or higher.
have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity;	**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 specialized activities and new methods, instruments, tools and materials.	
have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication;	**Knowledge**: Creating and evaluating new facts, concepts, procedures, principles and theories in a field of research that extends the frontier of knowledge.	

are capable of critical analysis, evaluation and synthesis of new and complex ideas;	**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 specialized activities and new methods, instruments, tools and materials.	**level 8.2** Acquiring a qualification includes at least 3 years of scientific or artistic research in full-time equivalent, resulting in original articles with a relevant international peer review. Entry requirements: previously acquired level 7 qualification or higher.
can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise;	**Social skills:** Creating and applying new social and generally acceptable forms of communication 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.	
can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge-based society.	**Social skills:** Creating and applying new social and generally acceptable forms of communication 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.	

Table 4.2: Referencing of university degrees to the QF-EHEA cycles

QF-EHEA cycles	HE qualifications as set out by Law	CROQF level	CROQF sublevel	Minimum ECTS credits as set out in the CROQF	ECTS credit ranges from QF-EHEA
Third cycle	*doktor/ica znanosti, doktor/ica umjetnosti* (e.g. *doktor/ica znanosti iz polja filozofije*)	**8**	8.2	At least 3 years of scientific or artistic research in full-time equivalent.	Not specified
	magistar/ra znanosti; partial qualification (e.g. *magistar/a znanosti iz polja strojarstva*)		8.1	At least 1 year of scientific or artistic research in full-time equivalent.	
Second cycle	*sveučilišni/a specijalist/ca* in a certain field (e.g. *sveučilišni/a spcijalst/ica poslovne ekonomije*); *sveučilišni/a magistar/a* in a certain field of Medicine, Dental medicine or Veterinary medicine (e.g. *sveučilišni/a magistar/a kliničke pedijatrije*); *magistar/a* with reference to a specialization (e.g. *magistar/ra inženjer/ka građevinarstva*); *doktor/ica* in Medicine, Dental medicine or Veterinary medicine (e.g. *doktor/ica veterinarske medicine*)	**7**	-	A minimum of 60 ECTS credits of the level 7 or higher level of units of learning outcomes. A total workload for the level 7 qualification, in addition to a previous level 6 qualification that is a precondition for access, is at least 300 ECTS credits. A minimum of 180 ECTS credits should refer to the level 6 or higher level of units of learning outcomes, respectively, and at least 60 ECTS credits should refer to the level 7 or a higher level of units of learning outcomes, respectively.	Typically includes 90 - 120 ECTS credits, with a minimum of 60 credits at the level of the 2nd cycle
First cycle	*sveučilišni/a provostupnik/ca* with reference to a specialization (e.g. *sveučilišni/a prvostupnik/ca (baccalaureus/baccalaurea) fizike*)	**6**	-	A minimum of 180 ECTS credits, with at least 120 ECTS credits of the level 6 or higher level.	Typically includes 180 - 240 ECTS credits

Table 4.3: Referencing of professional degrees to the QF-EHEA cycles

QF-EHEA cycles	HE qualifications as set out by Law	CROQF level	CROQF sub-level	Minimum ECTS as set out in the CROQF	ECTS ranges from QF-EHEA
Second cycle	*stručni/a specijalist/ica* in a certain field (e.g. *stručni/a specijalist/ica kriminalistike*); *diplomirani/a* in a field of Medicine / Dental medicine / Veterinary medicine (e.g. *diplomirani/a fizioterapeut*).	**7**	-	A minimum of 60 ECTS credits of the level 7 or higher level of units of learning outcomes. A total workload for the level 7 qualification, in addition to a previous level 6 qualification that is a precondition for access, is at least 300 ECTS credits. A minimum of 180 ECTS credits should refer to the level 6 or higher level of units of learning outcomes, respectively, and at least 60 ECTS credits should refer to the level 7 or a higher level of units of learning outcomes, respectively.	Typically includes 90 - 120 ECTS, with a minimum of 60 ECTS at the level of the 2nd cycle
		6	-	60 ECTS, with a minimum of 60 ECTS at the level 7 or higher level of CROQF; less than 300 ECTS with first cycle qualification	
First cycle	*stručni/a prvostupnik/ica* with reference to a specialisation (e.g. *stručni/a prvostupnik/ica (baccalaureus/baccalaurea informatike*)			A minimum of 180 ECTS credits, with at least 120 ECTS credits of the level 6 or higher level.	Typically includes 180 - 240 ECTS
Short cycle (within or linked to the first cycle)	*stručni/a pristupnik/ica* with reference to a specialisation (e.g. *stručni/a pristupnik/ica brodogradnje*)	**5**	-	A minimum of 120 ECTS credits, with at least 60 ECTS credits of the level 6 or higher level.	Minimum of 120 ECTS

4.6. Referencing of the CROQF to the EQF

The role, structure, levels and descriptors of the Croatian Qualifications Framework (CROQF) are described in detail in the Chapter 3. Herein, a referencing of CROQF to the European Qualifications Framework (EQF) is comprehensively elaborated. The referencing process was guided by strict criteria that had to be fulfilled. A detailed explanation of the fulfilment of the EQF criteria is provided in Chapter 5.

The CROQF reference levels express the complexity and scope of the acquired competencies. As explained in Chapter 3, there are 8 levels for units of learning outcomes (1 through 8) and 8 levels with an additional 2 sublevels for qualifications (1 through 8.2). Eight reference levels for units are described by level descriptors, using competencies as dynamic combinations of knowledge, cognitive, practical and social skills, and associated autonomy and responsibility. Some key competencies are explicitly indicated in the CROQF (e.g. in terms of the associated autonomy and responsibility, or directly, in terms of knowledge and skills).

Table 4.4 shows the referencing of CROQF level descriptors to EQF level descriptors. The structure of the CROQF descriptors matches the structure of EQF descriptors. Underlined keywords emphasise the correspondences between the levels.

Key competencies are generically included in descriptors of each qualification level and sublevel. Table 4.5 clearly indicates the way in which each qualification level and sublevel is referenced to EQF levels. Qualifications are expressed in terms of minimal requirements regarding volume, level and entrance.

Table 4.4 shows the overall referencing of CROQF levels and sublevels to both EQF levels and QF-EHEA cycles.

Table 4.4: Referencing of CROQF level descriptors to EQF level descriptors

EQF Level 1	***Knowledge*** • basic general knowledge	***Knowledge*** **Comprehending basic general facts and concepts** in simple and familiar everyday situations.	**CROQF Level 1**
	Skills • basic skills required to carry out simple tasks	***Skills*** **Cognitive:** Simple concrete logical thinking required to execute simple, clearly defined tasks in familiar situations. **Practical:** Performing simple actions in familiar situations. **Social:** Following general rules of behaviour in familiar social contexts.	
	Competence • work or study under direct supervision in a structured context	**Autonomy:** Executing simple tasks under direct and constant professional supervision in familiar situations. **Responsibility:** Taking responsibility for executing of simple tasks in familiar situations.	
EQF Level 2	***Knowledge*** • basic factual knowledge of a field of work or study	***Knowledge*** Comprehending basic facts and concepts in simple and familiar situations specific to a field of work and/or learning.	**CROQF Level 2**
	Skills • 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	***Skills*** **Cognitive:** 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:** Performing actions and applying simple methods, instruments, tools and materials in familiar conditions. **Social:** Realization of simple communication and cooperation in interaction with other individuals in familiar contexts.	
	Competence • work or study under supervision with some autonomy	**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.	

EQF Level 3	***Knowledge*** • knowledge of facts, principles, processes and general concepts, in a field of work or study	***Knowledge*** Comprehending facts, concepts, procedures and principles important for a field of work and/or learning in partially familiar situations.	**CROQF Level 3**
	Skills • a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	***Skills*** **Cognitive:** Explaining, estimating, selecting and using important facts, concepts and procedures required to execute a series of complex, defined tasks or problems within specific field of work and/or learning in familiar situations. **Practical:** Performing complex actions by applying a set of different simple methods, instruments, tools and materials in partially familiar conditions. **Social:** Realization of complex communication in interaction with other individuals and possibility of cooperation in a group in familiar contexts.	
	Competence • take responsibility for completion of tasks in work or study • adapt one's own behaviour to circumstances in solving problems	**Autonomy:** Executing a set of complex tasks and adapting one's own behaviour to set of given guidelines in familiar situations. **Responsibility:** Taking responsibility for executing a set of complex tasks in familiar situations.	

EQF Level 4	***Knowledge*** • factual and theoretical knowledge in broad contexts within a field of work or study	***Knowledge*** Analyzing wider spectrum of facts, concepts, procedures, principles and theories in a field of work and/or learning.	**CROQF Level 4 (4.1. and 4.2)**
	Skills • a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	***Skills*** **Cognitive:** 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:** Performing a set of 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:** Realization of complex communication in interactions with others and a possibility of cooperation in a group in social context that usually predictable, but are subject to change.	

	Competence • 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	**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 improving activities in situations that are usually predictable, but are subject to change.	

EQF Level 5	***Knowledge*** • comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	***Knowledge*** Analyzing, synthesizing 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.	**CROQF Level 5**
	Skills • a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	***Skills*** **Cognitive:** 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 ability to transfer knowledge to other areas and problems. **Practical:** Performing complex actions and applying complex methods, instruments, tools and materials in partially unpredictable situations, developing instruments, tools and materials and adjusting simple methods. **Social:** Partial management of complex communication in interactions with others and establishing cooperation in a group in partially unpredictable social contexts.	
	Competence • exercise management and supervision in the context of work or study activities where there is unpredictable change • review and develop performance of self and others	**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.	

EQF Level 6	***Knowledge*** • advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	***Knowledge*** Evaluating specialised facts, concepts, procedures, principles and theories in a field of work and/or learning, including their critical comprehension.	**CROQF Level 6**
	Skills • advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	***Skills*** **Cognitive:** 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 ability to transfer knowledge to other areas and problems. **Practical:** Performing complex activities and applying complex methods, instruments, tools and materials in unpredictable situations, developing instruments, tools and materials and adjusting complex methods. **Social:** Management complex communication, interactions with others and cooperation in different social groups in unpredictable social contexts.	
	Competence • 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	**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.	

EQF Level 7	***Knowledge*** • 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	***Knowledge*** Evaluating highly specialised knowledge in a field of work and/or learning some of which are at forefront of the field and can provide the basis for original thinking and scientific research as well as for integrating different fields of knowledge.	**CROQF Level 7**
	Skills • 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	***Skills*** **Cognitive:** 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:** Performing complex activities and applying complex methods, instruments, tools and materials, developing instruments, tools and materials	

	and procedures and to integrate knowledge from different fields	required in research and innovation processes, and adjusting complex methods. **Social:** Managing and leading a complex communication process, interactions with others and cooperation in different social groups in unpredictable social situations.	
	Competence • 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	**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.	

EQF Level 8	***Knowledge*** • knowledge at the most advanced frontier of a field of work or study and at the interfaces between fields	***Knowledge*** Creating and evaluating new facts, concepts, procedures, principles and theories in a field of research that extends the frontier of knowledge.	**CROQF Level 8 (8.1. and 8.2)**
	Skills • 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	***Skills*** **Cognitive:** 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:** Creating, evaluating and performing new proposed specialized activities and new methods, instruments, tools and materials. **Social:** Creating and applying new social and generally acceptable forms of communication in interaction with individuals and groups of different affiliations and different cultural and ethnical origin.	
	Competence • 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	**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.	

Table 4.5: Referencing of the CROQF to the EQF

EQF level	CROQF level	CROQF sublevel	Descriptors of qualification level as set out in the CROQF
1	1	-	A total workload for acquiring a qualification is a minimum of 480 credits. Entry requirements: None.
2	2	-	A total workload for acquiring a qualification is a minimum of 30 ECVET and/or HROO credits of the level 2 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.
3	3	-	A total workload for acquiring a qualification is a minimum of 60 ECVET and/or HROO credits of the level 3 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.
4	4	4.1	A total workload for acquiring a qualification is a minimum of 180 ECVET and/or HROO credits, with at least 120 ECVET and/or HROO credits of the level 4 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.
		4.2	A total workload for acquiring a qualification is a minimum of 240 ECVET and/or HROO credits, with at least 150 ECVET and/or HROO credits of the level 4 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 1 qualification.
5	5	-	A total workload for acquiring a qualification is a minimum of 120 ECVET or ECTS credits, with at least 60 ECVET or ECTS credits of the level 6 or higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 4.1 or higher qualification.
6	6	-	A total workload for acquiring a qualification is a minimum of 180 ECTS credits, with at least 120 ECTS credits of the level 6 or higher level of units of learning outcomes. Entry requirements: previously acquired level 4.2 or higher qualification in addition to passing the obligatory courses of the State Mature.
7	7	-	A total workload for acquiring a qualification is a minimum of 60 ECTS credits of the level 7 or higher level of units of learning outcomes. A total workload for the level 7 qualification, in addition to a previous level 6 qualification that is a precondition for access, is at least 300 ECTS credits. A minimum of 180 ECTS credits should refer to the level 6 or higher level of units of learning outcomes, respectively, and at least 60 ECTS credits should refer to the level 7 or a higher level of units of learning outcomes, respectively. Entry requirements: previously acquired level 4.2 or higher qualification in addition to passing the obligatory courses of the State Mature or a previously acquired level 6 or higher qualification.
8	8	8.1	Acquiring a qualification includes at least 1 years of scientific or artistic research in full-time equivalent, resulting in at least one published original article with a relevant international peer review. This is a partial qualification. Entry requirements: previously acquired level 7 qualification or higher.

		8.2	Acquiring a qualification includes at least 3 years of scientific or artistic research in full-time equivalent, resulting in original articles with a relevant international peer review. Entry requirements: previously acquired level 7 qualification or higher.

Table 4.6: An overall referencing

EQF level	CROQF level	CROQF sublevel	QF-EHEA cycles
8	8	8.2	Third cycle
		8.1	
7	7	-	Second cycle
6	6	-	First cycle[23]
5	5	-	Short cycle (within or linked to the first cycle)
4	4	4.2	
		4.1	
3	3	-	
2	2	-	
1	1	-	

4.7. Referencing Process: Challenges and Specific Issues, Recommendations

Interests for the involvement of a set of sublevels of the CROQF (within levels: 4 and 8) represent the main challenges for the referencing process of the CROQF to the EQF and the QF-EHEA.

All stakeholders agreed to reduce number of sublevels in the future, ones the CROQF takes full implementation.

[23] Short cycle qualifications are, strictly speaking, not a part of the QF-EHEA but the Bergen Communiqué recognizes that short cycle qualifications within or linked to the first cycle may be a part of national frameworks compatible with the QF-EHEA.

5. Fulfilment of Criteria and Procedures

5.1. Response to the EQF Criteria and Procedures

The Recommendation establishing the EQF invites Member States to refer their qualifications levels to the overarching framework EQF. To guide and help Member States meet this referencing, and to ensure that the referencing process is well understood and trusted by stakeholders in participating countries, the EQF Advisory Group has agreed on a set of ten referencing criteria and procedures.

The principal aim of the criteria and procedures is to ensure that the information and documentation published by participating countries on their referencing processes are:

- Validated by the competent authorities;
- Relevant;
- Transparent;
- Capable of being compared;
- Trustworthy.

The remainder of this section of the report sets out the ten referencing criteria as well as the Croatian response to each of them.

Criterion 1 (EQF)
The responsibilities and/or legal competence of all relevant national bodies involved in the referencing process, including the National Coordination Point, are clearly determined and published by the competent public authorities.

The National bodies involved in the referencing process are:

- The CROQF Committee established by the Government. The Committee includes representatives from relevant ministries, chambers, employers, unions, universities and schools, students, National councils, civil society and journalists.
- The CROQF Expert Team established by the Minister of Science, Education and Sports. It includes representatives from general education, VET, adult education, higher education, the labour market, science and technology.
- The National Coordination Point is the Ministry of Science, Education and Sports, which serves as the National Authority for education and for qualifications as well.
- Sectoral Working Groups with representatives from education, the labour market, NGOs, employers and civil society.

The Government and the Minister's Decisions determining the responsibilities and competencies of relevant national bodies and persons are published on the CROQF website.

The referencing process formally started with the completion of the basic legislative framework for the implementation of the CROQF, i.e. with the drafting of the Decree on CROQF that is foreseen to grow into the Law on CROQF by the end of 2012.

The CROQF Expert Team appointed by the Minister of Science, Education and Sports, established a Working Group for the Referencing Process. The Working Group consists of representatives from the Ministry of Science, Education and Sports, Agencies related to education and quality assurance and national education experts.

The Referencing Report was drafted by the Working Group of the CROQF Expert Team, guided and assisted by a team of international experts, extensively and intensively discussed with a wide group of stakeholders and social partners.

Following this consultative process, the final Referencing Report has been certified by the competent national body, the Ministry of Science, Education and Sports, and by the accreditation agency, the Agency for Science and Higher Education.

Criterion 2 (EQF)
There is a clear and demonstrable link between the qualifications levels in the national qualifications framework or system and the level descriptors of the European Qualifications Framework.

To demonstrate the link between the qualifications levels in the CROQF and the EQF level descriptors, the Working Group of the CROQF Expert Team commissioned a detailed technical comparison of the two frameworks. The detailed report is presented in Chapter 4.6. A brief summary is provided here as the response to this criteria.

There is a strong correspondence between the CROQF and the EQF in the understanding of the meanings of the learning outcomes on which they are based.

A close analysis of the outcomes statements in the CROQF and the EQF confirms that the CROQF levels 5 through 8 with corresponding sublevels can be referenced to EQF levels 5 through 8, and that further correspondences were confirmed in descending order between CROQF level 4 with sublevels 4.1 and 4.2 and EQF level 4, between CROQF level 3 and EQF level 3, between CROQF level 2 and EQF level 2, and between CROQF level 1 and EQF level 1.

Table 5.1: Corresponding EQF and CROQF levels (and sublevels)

EQF level	CROQF level	CROQF sublevel
8	8	8.2
		8.1
7	7	-
6	6	-
5	5	-
4	4	4.2
		4.1
3	3	-
2	2	-
1	1	-

The international experts, however, pointed out that the direct referencing of sublevels within some levels of the CROQF to the EQF is not unproblematic.

Criterion 3 (EQF)
The national qualifications framework or system and its qualifications are based on the principle and objective of learning outcomes and linked to arrangements for validation of non-formal and informal learning and, where these exist, to credit systems.

The main elements of the CROQF are:

- Competencies;
- Units of learning outcomes;
- Qualifications.

There are different ways of depicting all the competencies that a person has acquired. In almost all countries, competencies are depicted as knowledge, the application of that knowledge, and achieved employment. Achieved employment refers to the conditions in which knowledge and skills are employed, including spatial, temporal and other conditions. A similar depiction was adopted in the CROQF: ***knowledge and skills*** **(including *social skills*) and the associated *autonomy and responsibility***, which may be considered to be an optimal, understandable and measurable structure.

Qualification includes a set of units of learning outcomes of a certain reference level, volume, profile and quality, certified by a certificate or diploma or some other official document issued by a competent body.

In the CROQF, we define basic properties of qualifications and units of learning outcomes as:

- Reference level;
- Workload/volume;

- Profile (academic or professional);
- Quality (2 dimensions: personal and institutional).

For each of these basic and complete set of properties, we define the methods and procedures for their identification and for expressing their values. The reference level of a unit of learning outcomes is determined by means of level descriptors and expressed numerically (1 through 8 in the CROQF). The value of the volume is expressed in ECTS, ECVET or HROO credits or in years (PhD), and the profile is indicated by the title of the unit.

So, we define the minimal, but complete, set of information needed for any unit of learning outcomes as follows:

- Set of learning outcomes (as the main elements, clearly describing the unit);
- Profile (indicated by a title);
- Level (in accordance with level descriptors, 1 through 8);
- Volume (in ECTS, ECVET, CROGE or in years);
- Quality, described by:
    - A set of assessment criteria (including examples of the assessment, linked to learning outcomes);
    - Criteria for the competent awarding institution; and
    - Criteria for competent assessors within the awarding institution.

Unless excluded by special requirements, now any type of learning – formal, non-formal or informal – can achieve a set of competencies related to all types of profiles, at any level of complexity and with any value of workload. This means that the quality of the unit is the only property which can be used to distinguish one unit of learning outcomes achieved by formal learning from the same set of competencies achieved by non-formal or informal learning.

Criterion 4 (EQF)
The procedures for inclusion of qualifications in the national qualifications framework or for describing the place of qualifications in the national qualification system are transparent.

All qualifications need to be analysed in terms of learning outcomes in order to relate qualifications to the CROQF and consequently to the EQF.

The procedures for inclusion of qualifications in the national qualifications framework are described in the Law on the CROQF. All the existing qualifications and newly formed qualifications should pass through the procedures for inclusion in the Register of the CROQF.

The CROQF introduces a new Register, with the following structure:

- Units of learning outcomes;
- Standards of occupations;
- Standards of qualifications;

- Unit validation programs (including assessment providers);
- Qualifications awarding programs (including awarding institutions).

The Register is the basis for:

- A common robust quality assurance system;
- Validation of non-formal and informal learning (with equal value to formal learning);
- Transparency, access and progression (including mobility).

Criterion 5 (EQF)
The national quality assurance system(s) for education and training refer(s) to the national qualifications framework or system and are consistent with the relevant European principles and guidelines (as indicated in annex 3 of the Recommendation).

The Bologna Declaration and its accompanying documents, supported by the Ministers of the European countries that joined the European Higher Education Area (EHEA), constitute the baseline for the perfection of a quality assurance scheme in Croatia. A fundamental European document within this context is the *Standards and guidelines of quality assurance of the European Area of Higher Education* (ESG), accepted in May 2005 at the Ministry Conference in Bergen. "Standards and guidelines" was recognized as a strategic document in Croatia by a decision of the National Council for Higher Education on May 17th 2006.

Quality assurance in higher education and in science is regulated by the 2009 Act on Quality Assurance in Higher Education and Science. Internal quality assurance is provided by the institutions' internal QA systems in the form of internal checks. The Agency for Science and Higher Education (ASHE) is an independent public body responsible for external quality assurance in Croatia and implements regular audits, evaluations, accreditation of some professional study programmes and reaccreditations of all higher education institutions.

In its mission to improve the quality of higher education, the Agency for Science and Higher Education works closely with the National Council for Higher Education and National Council for Science, the Board for Financing Scientific Activity and Higher Education, the competent ministry and other state authorities and institutions of higher education, aiming at building a partnership relationship through direct communication or indirectly, through cooperation with the Rectors' Conference and the Council of Universities of Applied Sciences and University Colleges of Applied Sciences.

In April 2008, the ASHE became a full member of CEEN (Network of Central and Eastern European Quality Assurance Agencies in Higher Education). In the same year, the ASHE joined the Organization for Economic Cooperation and Development – OECD IMHE (Institutional management in Higher Education) forum. In December 2007 Agency for Science and Higher Education was granted an associate status within ENQA (European Association for Quality Assurance in Higher Education). In October 2011 the ASHE gained full ENQA (European Association for Quality Assurance in Higher Education) membership, and in

November of this year it was included on the European Quality Assurance Register for Higher Education (EQAR).

Criterion 6 (EQF)
The referencing process shall include the stated agreement of the relevant quality assurance bodies.

QA bodies, the Agency for Science and Higher Education (ASHE), the Agency for Vocational Education and Training and Adult Education (AVETAE), the Education and Teacher Training Agency (ETTA), the National Centre for External Evaluation of Education (NCEEE), and the Ministry of Science, Education and Sports (MSES) formally endorse the referencing process by engagement of their employees on the CROQF Expert team and Committees.

Criterion 7 (EQF)
The referencing process shall involve international experts.

The CROQF Expert Team established a steering committee to assist it in overseeing the referencing process. Five international experts on qualifications systems and frameworks joined the committee:

- Mr. Sjur Bergan, Head of the Department of Higher Education and Science in the Council of Europe, Member of the EQF Advisory Group, Chair of the QF-EHEA;
- Prof. Ewa Chmielecka, PhD, National Coordinator of the Polish NQF and the Prime Minister's Advisor on NQF, Member of the EQF Advisory Group, Member of the QF-EHEA;
- Meta Dobnikar, PhD, Head of Section for Higher Education of the Ministry of Higher Education, Science and Technology of Slovenia, Member of the QF-EHEA;
- Mr. Michael Graham, European Training Foundation (ETF);
- Mr. Eduard Staudecker, Austrian Federal Ministry of Education, Art and Culture, Member of the EQF Advisory Group.

The main task of the international experts was to assist the Referencing Working Group in drafting the national Referencing Report.

Criterion 8 (EQF)
The competent national body or bodies shall certify the referencing of the national qualifications framework or system with the EQF. One comprehensive report, setting out the referencing and the evidence supporting it shall be published by the competent national bodies, including the National Coordination Point, and shall address separately each of the criteria.

This report, which has been prepared and agreed upon by the competent national bodies, is the single, comprehensive report laying out the referencing and self-evaluation as well as

supporting evidence, of the Croatian Qualifications Framework to the EQF and the QF-EHEA. It addresses each of the ten criteria and procedures agreed upon by the EQF Advisory Group.

Criterion 9 (EQF)
The official EQF platform shall maintain a public listing of member states that have confirmed that they have completed the referencing process, including links to completed referencing reports.

Upon completion of this report, the NCP will inform the European Commission that the referencing process has been completed, and will provide a link to the published Referencing Report.

Criterion 10 (EQF)
Following the referencing process, and in line with the timelines set in the Recommendation, all new qualification certificates, diplomas and Europass documents issued by the competent authorities contain a clear reference, by way of national qualifications systems, to the appropriate European Qualifications Framework level.

The EU/CoE/UNESCO format of the Diploma Supplement was established in Croatia through the Ordinance on the Content of Diplomas and Diploma Supplements in January 2005. Amendments to this Ordinance that came into force in April 2007 ensure that all students graduating from the reformed Bologna study programmes at Croatian higher education institutions from 2007 will receive their Diploma Supplements automatically, free of charge, in Croatian and English, and in the EU/CoE/UNESCO format. The Ministry of Science, Education and Sports issued a nationwide handbook in July 2008.

The MSES and the Committee will coordinate a national response to Criterion 10 upon completion of the referencing process, including an agreed approach for the referencing of the established correspondences between CROQF and EQF levels in Certificate and Diploma Supplements.

5.2. Response to the QF-EHEA Criteria and Procedures

The CROQF for Higher Education is compatible and in alignment with the overarching Qualifications Framework for the European Higher Education Area (QF-EHEA).

This conclusion is based on the assertion of the CROQF Expert Team and Committees that all seven verification criteria and all six process criteria have been met. This conclusion has been supported by a reference group of stakeholders who were included in a consultation process as well as by the international experts referred to under procedural criterion 3.

In 1999 the Bologna Process was initiated by Ministers of Education from 29 countries with the aim of establishing a European Higher Education Area (EHEA) by 2010. Currently, 47 countries are involved in the process. A central objective of the Bologna Process is to create transparent and comparable structures of qualifications with the purpose of promoting mobility and international recognition of qualifications. The essential strategies aimed at achieving these goals are the implementation of a three cycle structure for qualifications and the development and realization of National Qualifications Frameworks.

5.2.1. Responses to the QF-EHEA Criteria

This chapter contains the conclusions of the CROQF Expert Team and Committees in assessment of compliance of the CROQF for Higher Education with the seven verification criteria for compatibility with the QF-EHEA.

Criterion 1 (QF-EHEA)
The national framework for higher education qualifications and the body or bodies responsible for its development are designated by the national ministry with responsibility for higher education.

The Ministry of Science, Education and Sports, as the National Authority for education and qualifications, is Croatia's National Coordination Point.

The CROQF was developed by the CROQF Committee established by the Government and the CROQF Expert Team that was appointed by Ministry of Science, Education and Sports, consisting of representatives from the Ministry of Science, Education and Sports and relevant stakeholders from the educational sector and the labour market.

Criterion 2 (QF-EHEA)
There is a clear and demonstrable link between the qualifications in the national framework and the cycle qualification descriptors of the European framework.

As noted in the 2007 report from the Bologna Working Group on Qualifications Frameworks, the objective of self-certification is to ascertain whether the National Qualifications Framework for Higher Education is in accordance with the Framework of Qualifications for the European Higher Education Area. There is, thus, no requirement for a perfect match between the descriptors employed in the two frameworks.

To examine whether such accordance exists between the CROQF and the QF-EHEA, the Working Group of CROQF Expert Team conducted a conceptual analysis and comparison of the qualification level descriptors contained in the two frameworks. The comparison is presented in detail in Chapter 4.5.

A brief summary is given in the following table as a response to the criteria.

Table 5.2: Corresponding EQF, CROQF levels (and sublevels) and QF-EHEA cycles

EQF level	CROQF level	CROQF sublevel	QF-EHEA cycles
8	8	8.2	Third cycle
		8.1	Intermediate qualification (within the third cycle)
7	7	-	Second cycle
6	6	-	First cycle
5	5	-	Short cycle (within or linked to the first cycle)

Firstly, the two frameworks were compared to ascertain whether there is an immediate recognisability between the qualification levels of the CROQF for Higher Education and the three cycles of the QF-EHEA. The CROQF for Higher Education contains three qualification levels corresponding to the QF-EHEA cycles, as well as the short cycle within the first cycle described in the original proposal of the QF-EHEA cycles. The Working Group of the CROQF Expert Team concluded that there is a high degree of recognisability, reflecting the fact that the CROQF was developed based on the Bologna Framework.

Each descriptor from the QF-EHEA cycles was compared with the corresponding descriptor in the CROQF in order to assess the conceptual and semantic, as well as the discursive consistency between the two frameworks. The Working Group concluded that there is consistency between the qualification level descriptors of the CROQF and the cycle descriptors of the QF-EHEA, as is shown in the table above.

Criterion 3 (QF-EHEA)

The national framework and its qualifications are demonstrably based on learning outcomes, and the qualifications are linked to ECTS or ECTS compatible credits.

The Working Group of CROQF Expert Team noted that all qualifications included in the CROQF for HE were clearly described using learning outcomes-based methodology. Learning outcomes are categorised as knowledge, skills and associated autonomy and responsibility, and these three categories are further divided into subcategories, allowing for a systematic approach in the formulation of outcome descriptors and the easy comparison between qualification levels and degree types. The categorisation of learning outcomes for the ordinary degree types is described in detail in the Chapter 4.5.2.

ECTS credits are related to the CROQF higher education levels in table below.

Table 5.3: ECTS linked to the CROQF levels.

QF-EHEA cycles	CROQF level	CROQF sublevel	Minimum ECTS credits as set out in the CROQF	ECTS credit ranges from QF-EHEA
		8.2	Minimum of three years of original	Not specified

Third cycle	**8**		scientific or artistic research is required; ECTS required for taught part of degree	
		8.1	Minimum of one year of original scientific or artistic research is required	
Second cycle	**7**	-	60 ECTS credits, with a minimum of 60 credits at level 7 or higher of the CROQF; 300 ECTS credits together with first cycle qualification, with a minimum of 180 credits at level 6 or higher of CROQF, including a minimum of 60 credits at level 7 or higher of the CROQF	Typically include 90 -120 ECTS credits, with a minimum of 60 credits at the level of the 2nd cycle
First cycle	**6**	-	180 ECTS credits, with a minimum of 120 credits at level 6 of the CROQF	Typically include 180 - 240 ECTS
Short cycle	**5**	-	120 ECTS credits, with a minimum of 60 credits at level 6 of the CROQF	Typically include 120 ECTS

Criterion 4 (QF-EHEA)
The procedures for inclusion of qualifications in the national framework are transparent.

The procedures for inclusion of qualifications in the CROQF Register of Qualifications are described in the CROQF Act.

It is an explicit ambition underpinning the CROQF for Higher Education that it shall reflect the Croatian higher education sector, and that new educational programmes are to be developed so as not only to meet the needs and demands of society but also to fit into the established qualifications structure. The procedures for inclusion in the Register of the CROQF will be published on the CROQF website and will be publicly available.

Criterion 5 (QF-EHEA)
The national quality assurance system for higher education refers to the national framework of qualifications and is consistent with the Berlin Communiqué and any subsequent communiqués agreed by ministers in the Bologna Process.

The European Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), which have been developed by ENQA (the European Association for Quality Assurance in Higher Education) is the cornerstone of the Croatian national quality assurance system. The ESG was recognized as a strategic document in Croatia by a decision of the National Council for Higher Education on May 17th 2006.

Quality assurance in higher education and in science is regulated by the 2009 Act on Quality Assurance in Higher Education and Science. Internal quality assurance is provided by the institutions' internal QA systems in the form of internal checks. The Agency for Science and Higher Education (ASHE) is an independent public body responsible for external quality assurance in Croatia and implements regular audits, evaluations, accreditation of some professional study programmes and reaccreditations of all higher education institutions.

On November 22nd 2006, the ASHE joined the INQAAHE (International Network for Quality Assurance Agencies in Higher Education), and on December 20th 2007 it established associate status with the ENQA (European Association for Quality Assurance in Higher Education) which presents a formal partnership between ASHE and ENQA. This status is also a part of the preparation for full ENQA membership.

In April 2008, the ASHE became a full member of CEEN (Network of Central and Eastern European Quality Assurance Agencies in Higher Education). In the same year, the ASHE joined the Organization for Economic Cooperation and Development – OECD IMHE (Institutional management in Higher Education) forum. In December 2007 Agency for Science and Higher Education was granted an associate status within ENQA (European Association for Quality Assurance in Higher Education). In October 2011 the ASHE gained full ENQA (European Association for Quality Assurance in Higher Education) membership, and in November of this year it was included on the European Quality Assurance Register for Higher Education (EQAR).

Criterion 6 (QF-EHEA)
The national framework, and any alignment with the European framework, is referenced in all Diploma Supplements.

All higher education institutions providing publicly recognised programmes are legally obliged to provide a Diploma Supplement with each formal diploma issued to students completing a programme of higher education. Institutions design their Diploma Supplements individually subject to a national template.

The template will be revised so both the QF-EHEA and the EQF are referenced in future national Diploma Supplements.

Criterion 7 (QF-EHEA)
The responsibilities of the domestic parties to the national framework are clearly determined and published.

The responsibilities of the domestic parties to the national framework are clearly determined in the CROQF Act.

Stakeholders in the implementation and development of the CROQF are individuals and legal and physical entities who:

- are authorised or in charge of interests of the sector, including relevant ministries, professional chambers and other relevant institutions;
- are authorised or in charge of providing support to formal education institutions, including the ministry in charge of science and education and national councils, agencies, national centres, civil society organizations and other institutions supported by the ministry in charge of science and education;
- represent legal or physical entities that are interested in accepting individuals with adequate qualifications, including the Croatian Employers' Association, Croatian Chamber of Economy and Croatian Chamber of Trades and Crafts;
- represent the employed holders of qualifications, including trade unions;
- represent the holders of qualifications who do not have appropriate employment, including the Croatian Employment Service and other relevant institutions;
- represent those who are in the process of obtaining a qualification, including the Croatian Student Council and other student organizations or ombudsman;
- represent legal or physical entities that provide education, assess learning outcomes and award qualifications, including Rectors' Council and other relevant institutions;
- represent those who entirely or partly sponsor the process of qualification obtainment, including relevant funds and parents.

The tasks of the ministry responsible for science and education include:

- Adopting guidelines for the development of qualifications standards;
- Developing and maintaining the IT system for management of the CROQF Register;
- Referencing of the CROQF to the EQF and self-certification of the CROQF against the QF-EHEA;
- Monitoring implementation and development of other countries' national qualifications frameworks, those referenced and not referenced to the EQF and those self-certified and not self-certified against the QF-EHEA;
- Monitoring and analysing implementation and development of qualifications frameworks in other countries' education policies;
- Establishing and coordinating the work of Sectoral councils composed of key stakeholders according to criteria stipulated by the Act;
- Coordinating quality assurance related to qualifications and learning outcomes, in line with the provision under the Act;
- Developing a system for recognition and validation of non-formal and informal learning;
- Monitoring and analysing implementation of the system for validation of learning outcomes acquired through non-formal and informal learning and proposing measured for its regulations;
- Adopting guidelines and preparing other material required for implementation and development of the CROQF;
- Informing the public about technical issues related to the CROQF;
- Administrative support to the National Council;

- Developing the role of the CROQF in procedures related to recognition and identification of qualifications.

Tasks of the ministry responsible for labour include:

- Establishing and developing a system of information collection about current and future market needs and required competences;
- Collecting data about changes in competences required for occupations and proposing developments of qualifications standards and occupational standards according to labour market needs;
- Participating in preparation and elaboration of strategic background material, as well as analysis for developing the CROQF, aimed at enhancing employability and raising competitiveness of the Croatian economy and society;
- Preparing and elaborating analytical background material and methodology for elaboration of occupational standards and managing the Sub-register of occupational standards;
- Monitoring the employability of persons with acquired qualifications.

Tasks of the ministry responsible for regional development include:

- Adopting guidelines for the development of regional labour market;
- Monitoring the effects of population's qualification structure on regional development;
- Analysing demands for human resources development resulting from countries' /regions' development strategies.

Responsibility for the implementation of the CROQF at the programme level rests with the institutions of higher education, which are responsible for incorporating learning outcomes in line with the degree type descriptions in their descriptions of each study programme.

5.2.2. Responses to the QF-EHEA Procedures

The CROQF Expert Team has also considered whether the CROQF meets the six process criteria for the alignment of national qualifications frameworks to the QF-EHEA.

This chapter contains the assessments and conclusions of the Working Group of the CROQF Expert Team.

Procedure 1 (QF-EHEA)
The competent national body/bodies shall self-certify the compatibility of the national framework with the European framework.

The CROQF Expert Team, appointed by the Minister of Science, Education and Sports, established a Working Group for the Self-certification and Referencing processes. The

Working Group consists of representatives from the Ministry of Science, Education and Sports, Agencies related to education and quality assurance and national education experts.

The Self-certification was drafted by the Working Group of the CROQF Expert Team, guided and assisted by a team of international experts, extensively and intensively discussed with a wide group of stakeholders and social partners.

Following this consultative process, the final Referencing Report with Self-certification has been certified by the competent national body, the Ministry of Science, Education and Sports, and the Agency for Science and Higher Education.

Procedure 2 (QF-EHEA)
The self-certification process shall include the stated agreement of the quality assurance bodies in the country in question, as recognised through the Bologna Process.

Quality assurance bodies, the Agency for Science and Higher Education (ASHE) and the Ministry of Science, Education and Sports (MSES) formally endorsed the self-certification process through the engagement of their employees on the CROQF Expert Team.

agency for science and higher education croatia

ashe

Class: 130-03/11-01/0004
Register number: 355-03-12-6

Zagreb, February 6th 2012

Subject: Approval of the Referencing and Self-certification Report of the Croatian Qualifications Framework

On behalf of the Agency for Science and Higher Education, the Croatian national agency for external quality assurance in science and higher education established by the Republic of Croatia, a full ENQA member and listed in the EQAR register since 2011, I hereby confirm that the Agency for Science and Higher Education has been actively involved in the referencing process and is in full agreement with the documentation concerning higher education, provided in the *Referencing and Self-certification Report of the Croatian Qualifications Framework to the European Qualifications Framework and to the Qualifications Framework of the European Higher Education Area.*

Professor Jasmina Havranek, PhD
Agency for Science and Higher Education Director

Donje Svetice 38/5
10 000 Zagreb, Croatia
T + 385 1 6274 800
F + 385 1 6274 801
E office@azvo.hr
W www.azvo.hr

ENQA eqar

Figure 5.1: Endorsement of the Agency for Science and Higher Education.

REPUBLIC OF CROATIA
MINISTRY OF SCIENCE, EDUCATION AND SPORTS

Class: 602-04/12-10/00011
File No.: 533-06-12-0001
Zagreb, 15 February 2012

Subject: Certification of the Referencing and Self-certification Report of the Croatian Qualifications Framework to the European Qualifications Framework and to the Qualifications Framework of the European Higher Education Area

I hereby confirm that the Croatian Referencing and Self-certification Report of the Croatian Qualifications Framework (CROQF) to the European Qualification Framework (EQF) and the Qualification Framework of the Higher Education Area (QF-EHEA) has been made in accordance with the criteria and procedures agreed by the EQF Advisory Group and the Bologna Follow-Up Group and is therefore certified by the Ministry of Science, Education and Sports of the Republic of Croatia.

Sincerely,

MINISTER

Željko Jovanović, MD PhD

Figure 5.2: Certification by the Ministry of Science, Education and Sports

Procedure 3 (QF-EHEA)
The self-certification process shall involve international experts.

Five international experts have been involved in the self-certification process as full members of the Working Group for Self-certification.

These five international experts played a key role in the discussions during the self-certification process. See Criterion 7 (EQF).

Procedure 4 (QF-EHEA)
The self-certification and the evidence supporting it shall be published and shall address separately each of the criteria set out.

The final Self-certification Report as a part of the combined Referencing and Self-certification Report will be published on the website of the CROQF (www.kvalifkacije.hr).

Procedure 5 (QF-EHEA)
The ENIC and NARIC networks shall maintain a public listing of States that have confirmed that they have completed the self-certification process

The CROQF Expert Team will inform all stakeholders in Croatia and relevant bodies in European Higher Education Area when the self-certification process as a part of referencing process is completed, in order that Croatia may be included on the list of countries that have completed the self-certification process as maintained on the web sites of the EHEA and the ENIC and NARIC Networks.

Procedure 6 (QF-EHEA)
The completion of the self-certification process shall be noted on Diploma Supplements issued subsequently by showing the link between the national framework and the European framework.

Diploma Supplements in Croatia are issued by the institutions awarding degrees using a national template. Following the publication of the Referencing and Self-certification Report, the CROQF Expert Team is tasked with ensuring that compliance of the CROQF with the QF-EHEA is included in the national Diploma Supplement template. This will thus be noted on Diploma Supplements issued henceforth by Croatian institutions of higher education.

5.3. Response to the Common Principles for Quality Assurance

There are nine common principles for quality assurance described in the EQF document. The following briefly describes how they are applied within the CROQF.

Common principle 1 (QA):
Quality assurance policies and procedures should underpin all levels of the EQF.

The CROQF has a strict, clear system of quality assurance which shall be implemented through appropriate Register organised in five related databases. This Register comprises the foundation for a common robust quality assurance system. Units of learning outcomes, which are the core of the system, shall satisfy professional relevance and educational quality criteria. The validation of units of learning outcomes requires accredited training and assessment providers. Standards of both qualifications and occupations consist of defined learning outcomes. Qualification awarding programs and institutions are also accredited by adequate relevant institutions, namely the Agency for Science and Higher Education. Validation and awarding processes are assured by accreditation systems for each level of the CROQF. This organisational structure provides a comprehensive quality assurance system.

Common principle 2 (QA):
Quality assurance should be an integral part of the internal management of education and training institutions.

All institutions that offer units and qualifications within the CROQF are required to have in place internal systems of quality assurance in order to ensure consistent assessment practices and compliance with awarding organisations' requirements. These requirements apply regardless of the nature of the institutions or whether or not these institutions are publicly funded.

Common principle 3 (QA):
Quality assurance should include regular evaluation of institutions, their programmes or their quality assurance systems by external monitoring bodies or agencies.

Quality assurance of assessment of units of learning outcomes is carried out by accredited institutions which are regularly supervised by the NCP body, as regulated by the CROQF related legislation.

Quality assurance in higher education and in science is regulated by the 2009 Act on Quality Assurance in Higher Education and Science. Internal quality assurance is provided by the institutions' internal QA systems. Study programmes delivered at public universities are self-accredited by university senates, while programmes delivered by private higher education institutions, polytechnics or colleges are accredited by the Agency for Science and Higher Education (ASHE).

All higher education institutions are subject to reaccreditation every five years.

Common principle 4 (QA):
External monitoring bodies or agencies carrying out quality assurance should be subject to regular review.

External monitoring body for higher education, Agency for Science and Higher Education (ASHE), is monitored by the National Council for Higher Education and Research. In December 2007 the ASHE was granted an associate status within the ENQA. In October 2011 the ASHE gained full ENQA (European Association for Quality Assurance in Higher Education) membership, and in November of this year it was included on the European Quality Assurance Register for Higher Education (EQAR).

Within the CROQF all external quality assurance monitoring bodies and agencies will be subjects to regular international review.

Common principle 5 (QA):
Quality assurance should include context, input, process and output dimensions, while giving emphasis to outputs and learning outcomes.

Quality assurance processes operated by the ASHE for higher education is designed to monitor assessment of units of learning outcomes and qualifications, including conditions in which teaching takes place.

The CROQF Register consists of databases of units of learning outcomes, occupations, qualifications, curricula and accredited institutions for assessment and certification, which will be the base for a common quality assurance system for the whole educational system, covering all aspects, including fit to purpose up to reliability of teaching, assessment and awarding process.

Common principle 6 (QA):
Quality assurance systems should include the following elements:

1. **Clear and measurable objectives and standards;**
2. **Guidelines for implementation, including stakeholder involvement;**
3. **Appropriate resources;**
4. **Consistent evaluation methods, associating self-assessment and external review;**
5. **Feedback mechanisms and procedures for improvement;**
6. **Widely accessible evaluation results.**

As a part of the CROQF Register, clear and measurable objectives and standards for all qualifications are defined within standards of occupations, standards of qualifications, including assessment and awarding criteria and procedures. Guidelines for quality assurance implementation are provided by all agencies and the MSES. It is, required by all awarding institutions and institutions registered for assessment, to carry out self-review and reporting, which are monitored as part of the external review process. Monitoring and evaluation reports are published on the web-site of the CROQF (www.kvalifikacije.hr).

Common principle 7 (QA):
Quality assurance initiatives at international, national and regional level should be coordinated in order to ensure overview, coherence, synergy and system-wide analysis.

Quality assurance system and all processes within the CROQF are coordinated at the central national level.

Common principle 8 (QA):
Quality assurance should be a cooperative process across education and training levels and systems, involving all relevant stakeholders, within Member States and across the Community.

All interested parties are invited to submit proposals of units of learning outcomes, occupations standards, qualifications standards, curricula and accredited institutions for assessment and certification, to the CROQF Register. Accreditation procedures, including assessment and evaluation of each proposal, are clearly defined by the CROQF related legislation and involve all relevant stakeholders.

Common principle 9 (QA):
Quality assurance orientations at Community level may provide reference points for evaluations and peer learning.

Being a full member of the European Association for Quality Assurance in Higher Education (ENQUA) and the European Quality Assurance Register for Higher Education (EQAR) as of 2011, the Agency for Science and Higher Education, as international recognised national quality assurance body, is involved in the peer learning activities and evaluations at the international level.

6. Further Development of the CROQF

Further development of the CROQF includes, first of all, finalisation of the institutional framework for the further development and implementation of the CROQF. The CROQF Act has been adopted in February 2013. Secondary legislation will further regulate and define respective responsibilities and duties of the most important partners and stakeholders in the implementation of the CROQF, as well as criteria and procedures related to the quality assurance and development of the CROQF Register.

The CROQF Register, including units of learning outcomes, standards of occupations, standards of qualifications, curricula and accredited institutions for assessment and certification, will be developed as a comprehensive database bringing together all relevant data on competences required by the labour market and the relevant qualifications awarded by accredited education institutions.

Moreover, further activities are envisaged to establish a comprehensive system of Recognition of prior learning including respective criteria and procedures for assessment and evaluation of non-formal and informal learning.

Finally, activities envisaged include a comprehensive information and promotion campaign of the CROQF including education and training activities as well as further promotion of the CROQF at the national and international level, most notably among the stakeholders in the education and the economy sectors.

Further development of the CROQF will be envisaged in synergy with various EU initiatives, most particularly, EQF/Ploteus portal, European Classification of Skills, Competences, Qualifications and Occupations (ESCO).

References

1. AGENCY FOR ADULT EDUCATION, (2008) National Report on The Development and State of the Art of Adult Learning and Education, Zagreb
2. CENTRAL OFFICE FOR DEVELOPMENT STRATEGY AND COORDINATION OF EU FUNDS (2006) Strategic Development Framework 2006 - 2013, Zagreb.
3. COMMISSION OF THE EUROPEAN COMMUNITIES (2000) A memorandum on Lifelong Learning, Commission Staff Working Paper SEC (2000) 1832, Brussels.
4. COMMISSION OF THE EUROPEAN COMMUNITIES (2001) Making a European Area of Lifelong Learning a Reality, COM(2001) 678 final, Brussels.
5. COMMISSION OF THE EUROPEAN COMMUNITIES (2005) The European Higher Education Area - Achieving the Goals, Communiqué of the Conference of European Ministers Responsible for Higher Education, Bergen, 19-20 May 2005
6. COMMISSION OF THE EUROPEAN COMMUNITIES (2005a) Progress Towards The Lisbon Objectives in Education and Training, Commission Staff Working Paper SEC (2005) 419, Brussels.
7. COMMISSION OF THE EUROPEAN COMMUNITIES (2005b) Toward a European Qualifications Framework for Lifelong Learning, Commission Staff Working Document, SEC (2005) 957, Brussels.
8. COMMISSION OF THE EUROPEAN COMMUNITIES (2006) Adult learning: It is never too late to learn, Communication from the Commission, COM (2006) 614 final, Brussels.
9. COMMISSION OF THE EUROPEAN COMMUNITIES (2007) Action Plan on Adult Learning: It is always a good time to learn, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2007) 558 final, Brussels.
10. COMMITTEE OF THE GOVERNMENT OF THE REPUBLIC OF CROATIA FOR ADULT EDUCATION (2004) A Strategy for Adult Education, Zagreb
11. CONFINTEA V (1997) Adult Education The Hamburg Declaration The Agenda for the Future, The Fifth International Conference on Adult Education, Hamburg, July 1997.
12. COUNCIL OF EUROPE (1996) European Social Charter, Strasbourg.
13. COUNCIL OF THE EUROPEAN UNION (2001) The concrete future objectives of education and training systems', 2001, Report from the Education Council to the European Council 5680/01 EDUC 23, Brussels.
14. CROATIAN ACADEMY OF SCIENCES AND ARTS (2002) Declaration on Knowledge, Zagreb (In Croatian)
15. CROATIAN ACADEMY OF SCIENCES AND ARTS Declaration on Knowledge - Croatia Based on Knowledge and the Application of Knowledge, Zagreb (In Croatian)
16. Croatian Bureau of Statistics (2011), Statistical information, Zagreb

17. Croatian Qualifications Framework: Introduction to Qualifications, 2009, MSES, Zagreb
18. Declaration of the European Ministers of Vocational Education and Training, and the European Commission, convened in Copenhagen on 29 and 30 November 2002, on enhanced European cooperation in vocational education and training (2002)
19. Detailed work programme on the follow-up of the objectives of Education and training systems in Europe (2002) Official Journal of the European Communities 2002/C 142/01
20. Education and Training in Europe: diverse systems, shared goals for 2010. (2002) Office for Official Publications of the European Communities, Luxembourg.
21. EUROSTAT (2006) Lifelong learning (adult participation in education and training), EU Labour Force Survey.
22. Lifelong Learning in Europe: Moving towards EFA Goals and the CONFINTEA V Agenda Call to Action (2002) Sofia Conference on Adult Education 9th November 2002, Sofia.
23. Lisbon European Council 23 and 24 March 2000 Presidency Conclusions (2000)
24. MINISTRY OF ECONOMY, LABOUR AND ENTREPRENEURSHIP (2010) Report on the Implementation of the Joint Assessment of the Employment Policy Priorities of the Republic of Croatia for 2009, June 2010, Zagreb
25. MINISTRY OF SCIENCE EDUCATION AND SPORTS (2008) Croatian Bologna process national report 2007-2009, Zagreb
26. MINISTRY OF SCIENCE, EDUCATION AND SPORTS (2003) For a Literate Croatia: The Way to Desirable Future, Zagreb (In Croatian)
27. MINISTRY OF SCIENCE, EDUCATION AND SPORTS (2005) Education Sector Development Plan for the period 2005-2010, Zagreb
28. MINISTRY OF SCIENCE, EDUCATION AND SPORTS (2007) Ministry of Science, Education and Sports - Overview of achievements January 2004 – April 2007, Government of the Republic of Croatia, Ministry of Science, Education and Sports, Zagreb.
29. NATIONAL COMPETITIVENESS COUNCIL (2004), 55 Policy Recommendations for Raising Croatian Competitiveness, Zagreb
30. National Curriculum Framework for Preschool, General Compulsory and Secondary School Education, MSES, 2010
31. OFFICE FOR THE STRATEGY OF DEVELOPMENT OF THE REPUBLIC OF CROATIA (2001) 'Education - White Paper on Croatian Education', Strategy for the Development of the Republic of Croatia: Croatia in the 21st Century, Zagreb
32. Referencing National Qualifications Levels to the EQF - A Discussion Note, EQF Advisory Group, 11-12 October 2010, Leuven, Note AG7-5
33. Referencing National Qualifications Levels to the EQF, European Qualifications Framework Series: Note 3, Mike Coles, GHK Consulting, 2011
34. The Baseline of the Croatian Qualifications Framework (2007) The Croatian Government, July 2007, Zagreb

35. The Bologna Declaration of 19 June 1999 (1999) Joint declaration of the European Ministers of Education
36. THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION (2008) Recommendation of the European Parliament and of the Council of April 2008, on the establishment of the European Qualifications Framework for lifelong learning, Official Journal of the European Union (2008/C 111/01)
37. WORLD EDUCATION FORUM (2000) The Dakar Framework for Action; Education for All: Meeting our Collective Commitments, Adopted by the World Education Forum Dakar, Senegal, 26th-28th April 2000.

List of Figures

Figure 2.1	Education and training system in Croatia	**11**
Figure 2.2	Children covered by preschool education and care programmes	**12**
Figure 2.3	Number of universities, polytechnics and colleges in the Republic of Croatia	**31**
Figure 2.4	Number and type of study programmes by HEI type	**33**
Figure 2.5	Types of study programmes at HEIs in Croatia	**34**
Figure 2.6	Example of Diploma Supplement	**51**
Figure 5.1	Endorsement of the Agency for Science and Higher Education	**117**
Figure 5.2.	Certification by the Ministry of Science, Education and Sports	**118**

List of Tables

Table 2.1	Preschool education	**12**
Table 2.2	Primary education	**14**
Table 2.3	General education in secondary schools (Gymnasium)	**17**
Table 2.4	Arts schools	**18**
Table 2.5	One-year vocational education and training programmes	**21**
Table 2.6	Two-year vocational education and training programmes	**22**
Table 2.8	Four-year (and 5-year for health sector programmes) VET programmes	**24**
Table 2.9	Postsecondary professional education and training	**28**
Table 2.10	Number and type of study programmes, by HEI type (source: ASHE, 2010)	**34**
Table 2.11	Undergraduate university study (*preddiplomski sveučilišni studij*)	**38**
Table 2.12	Graduate university study (*diplomski sveučilišni studij)*	**41**
Table 2.13	Graduate university study – specialist (*poslijediplomski specijalistički studij*)	**44**
Table 2.14	Postgraduate university study (*poslijediplomski sveučilišni studij*)	**45**
Table 2.15	Short cycle professional study (*stručni studij*)	**46**
Table 2.16	Undergraduate professional study (*stručni studij*)	**47**
Table 2.17	Specialist professional graduate study (*specijalistički diplomski stručni studij*)	**48**
Table 2.18	Corresponding EQF levels and QF-EHEA cycles	**56**
Table 3.1	Levels and sub-levels in the CROQF	**61**

Table 3.2	Level (and sub-level) descriptors in the CROQF	**64**
Table 3.3	Level 1 descriptors	**66**
Table 3.4:	Level 2 descriptors	**66**
Table 3.5	Level 3 descriptors	**67**
Table 3.6	Level 4 descriptors	**67**
Table 3.7	Level 5 descriptors	**68**
Table 3.8	Level 6 descriptors	**69**
Table 3.9	Level 7 descriptors	**69**
Table 3.10	Level 8 descriptors	**70**
Table 4.1	Referencing of CROQF levels to the QF-EHEA	**87**
Table 4.2	Referencing of university degrees to the QF-EHEA cycles	**93**
Table 4.3	Referencing of professional degrees to the QF-EHEA cycles	**94**
Table 4.4	Referencing of CROQF level descriptors to EQF level descriptors	**96**
Table 4.5	Referencing of the CROQF to the EQF	**101**
Table 4.6	An overall referencing	**102**
Table 5.1	Corresponding EQF and CROQF levels (and sublevels)	**105**
Table 5.2	Corresponding EQF and CROQF levels (and sublevels)	**111**
Table 5.3	ECTS linked to the CROQF levels	**111**