

Product 5

Examination Regulations, Evaluation and Recognition

A1 Analysis of existing examination regulations in the participating countries (English)

A2 Concept for the unified examination regulations (English and Polish)

A3 Negotiations and implementations (English)

A4 Transfer and recognition (English)

Partners

Hanse-Parlament (HP), Germany

Dresden Chamber of Crafts, Germany

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Nordic Forum of Crafts, Norway

District Guild of Crafts Small and Medium Enterprises – Employers in Wejherowo, Poland

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1. Analysis of existing Examination Regulations in the participating Countries

1.1 Denmark¹

As the Danish vocational education and training (VET) system does not have Master craftsman education, the analysis builds upon Diploma exam that is approximately at the same level as the Master craftsman education that is known from German speaking area. Diploma programs consist of modules, often 4 – 6 modules, each of which awards students with 5 or 10 ECTS points, and a final project awarding 15 ECTS points. The students typically take the diploma courses while working, which means they take one module pr. semester.

Example: For a Diploma course to trained guide/supervisor in school, students require 45 ECTS points (4 modules x 10 ECTS + 1 module x 5 ECTS) before they are permitted to prepare the final project. When the final project is finished, the skilled guide has acquired 60 ECTS points in total that is equivalent to one-year full-time study and in part-time - three years or six semesters.

The Diplomas courses take place at Academies and University Colleges, and as the exam is not managed centrally by the government, the Academies and the University Colleges place them whenever it fits into the schedule. Still, an external examiner is required, and the government recognizes the result.

Admission and exams

To attend a Diploma course, candidates shall have been practicing profession at least for 2 years in that he/she obtained qualification.

Generally, Diploma examination consists of written synopsis of 5 - 8 normal pages (15 for the final project) followed by an oral examination based on the candidate's synopsis. The exam is carried out by a teacher and an external examiner. The student earns for both parts one grade.

It is also possible to take part in Diploma courses via distance/e-learning as long as the student makes the synopsis and takes part in the oral examination. Such an example for distance learning is the Certificate of Vessel Management at the Copenhagen School of Marine and Technical Engineering.

Answers to specific questions regarding the Master craftsman training

Are there any prerequisites for admission to the exam?

Two years' work experience with a Bachelor's degree.

Is it a state audit scheme?

¹ Prepared by the Partner International Business College

The Diploma exam is state recognized; however, Academies or University Colleges that carry out the training programs take on all responsibility.

Does the examination take place with a recognized degree of vocational training or further vocational training?

The Diploma degree is at the level 6 in the Danish Qualification Framework, and it requires a Bachelor's degree, which can be built upon a vocational education and high school level subjects, usually Danish and Mathematics that are full-time courses.

In addition, the Academies offer trainings at the level 5 in Danish Qualification Framework, which build directly upon the vocational training and 2 high school level subjects, usually Danish and Mathematics, both full-time courses as well as the Bachelor's degree.

Are the examination regulations comparable to a Master craftsman examination?

The government recognizes the exam; it takes place in a dialogue with a teacher and an external examiner, and the content of the exam is the working practice of the student. As in Denmark, there does not exist Master craftsman education, parallel education/degree exist: training of people at work, based on their working practice and taking place at the same time as they work, giving them skills, that they can use in their daily work at an advanced level to what they do without it.

Does it cover all four parts of the Master craftsman training Part A1 occupation-specific practical training, Part A2 occupation-specific theory, Part B1 Business administration, law and management and Part B2 Profession and working-educational knowledge? Is it a test for all four parts? Or does such a test have to be completed for each part?

Denmark does not have such an education, but when the students study Diploma, they must pass an exam by the end of each module.

How long does the oral exam take?

The Diploma exams take 20 minutes.

How often can the test be repeated?

Usually every half year.

From the ministerial notice on the diplomas

Synopsis

A synopsis consists of a brief presentation of a topic in which the student explains a defined problem, which will be discussed at the oral part of the exam. A synopsis is a brief description of contents or summary, and it is not to be seen as a final report.

A synopsis should include the following:

- Table of content
- Introduction

The introduction presents the reason for choosing subject and possible problem areas as well as a brief presentation of the company or organization that you work with.

Purpose of the synopsis and precision of exact topic

The definition and the demarcation of the exact topic clarifies the considerations made in the introduction, so that it is clear which issues the student wishes to work with. And that will define the selection of the theory, the collection and use of empirical data and the overall discussion and conclusion.

Subject demarcation justifies and argues why the selected parts are of particular interest, and why some aspects will be excluded.

Analysis and discussion

This part of the paper presents the theoretical and empirical approaches and the synopsis is analytically examined. Unlike the project report, the synopsis does not unfold the analysis in its entirety. The student finalizes the analysis focusing at present analysis and perspectives, so that the paper is for further discussion of the issue for the oral exam.

Conclusion and perspectives

The conclusion should relate to the problem and may have the character of preliminary findings. Possible perspectives may be reflections on the implications for practice and / or possible relevant topics for examination.

1.2 Germany

The German master craftsman's examination includes the following independent examinations parts:

1. examination of masterful performing of conventional work (part I),
2. examination of required subject-specific theoretical knowledge (part II),
3. examination of required knowledge of business, commerce and law (part III) and
4. examination of required vocational education and training knowledge (part IV).

The four parts of the master craftsman training

- Part I Subject-related practical knowledge
- Part II Subject-related theoretical knowledge
- Part III Knowledge of business, commerce and law
- Part IV Vocational education and training knowledge

are completed with a separate, independent examination in each case. The master craftsman's examination is passed in total if each of the four parts of the master craftsman training is passed. Separate parts of the master craftsman training can be repeated three times.

The master craftsman's examination regulations are issued by the Federal Ministry of Economics and Technology in consultation with the Federal Ministry of Education and Research and published in the Federal Law Gazette.

For the master craftsman's examination parts I Subject-related practical knowledge and II Subject-related theoretical knowledge the examination regulations are defined for each occupation separately and issued as regulations. The regulation related to the occupational profile of the master craftsman's examination and to the examination regulations in parts I and II of the master craftsman training "Electrical engineer" (regulation concerning master craftsman in electrical engineering - ElektroTechMstrV) were published in the Federal Law Gazette for the year 2002, part I, No. 43, issued in Bonn on July 2, 2002².

For the master craftsman's examination parts III Knowledge of business, commerce and law and IV Vocational education and training knowledge there are uniform examination regulations for all the occupations which were issued as regulations related to common requirements in the master craftsman's examination and published in the Federal Law Gazette for the year 2000, part I, No. 33, issued in Bonn on July 25, 2000³.

Part III Knowledge of business, commerce and law of the master craftsman's examination can be also conducted in the form of a recognized further training qualification "Certified specialist for commercial management". Corresponding examination regulations "Further training qualification in commercial management" were issued by the Federal Ministry of Economics and Technology and published in the Federal Law Gazette on November 11, 2014 (FLG I p. 1725)⁴.

Further training qualification "Certified specialist for commercial management"

This examination should prove the development of vocational skills, knowledge and capabilities (occupational competence) aimed at career progression.

Thanks to the development of occupational competence the examinee should be able to analyze economic, commercial and legal problems as management staff at the enterprise and also to implement the developed solutions considering recent developments operatively. The developed occupational competence includes especially the following:

- to analyze and to assess the potentials of an enterprise taking into account economical aspects,
- to support establishment of enterprises,
- to perform business administration and to develop the enterprise,
- to observe the function of the point of intersection between commercial business units and those units which create services

Admission requirements

² <http://www.gesetze-im-internet.de/elektrotechmstrv/BJNR233100002.html>

³ <http://www.gesetze-im-internet.de/amstprv/BJNR214900011.html>

⁴ https://www.bmbf.de/intern/upload/fvo_pdf/14_12_01_Fachmann_fuer_kaufmaennische_Betriebsfuehrung.pdf

Only those students are admitted to the examination which prove the following:

- a successfully passed apprenticeship or final examination in a recognized three-year training occupation or
- a successfully passed final examination in a recognized two-year training occupation and a two-year professional practice.

Outline of the examination

Parts of the examination are three areas of activity and one compulsory optional area of activity. The examinee informs about the selected compulsory optional area of activity by application to the examination.

Areas of activity are:

- evaluation of competitive ability of enterprises,
- preparation, conduct and assessment of establishment and takeover activities and
- development of corporate management strategies.

Compulsory optional areas of activity are:

- use of information and communication technologies,
- utilization of communication and presentation techniques in business transactions,
- implementation of bookkeeping with the aid of customary software and
- implementation of project management at the enterprise.

In activity “Evaluation of competitive ability of enterprises” skills should be proven which guarantee the ability to evaluate economic, commercial and legal preconditions for the competitive ability of an enterprise and vocational development potentials as well as to present the necessity to make decisions. During the definition of tasks several of the following qualification contents should be linked:

- Analysis of business objectives and classification in one business objectives system,
- Substantiation of definition of corporate culture and corporate image for the corporate performance and competitive ability,
- Analysis of situation of the enterprise at the market and substantiation of success potential,
- Use of information from the accounting system, especially from the balance sheet as well as profit and loss statement for the analysis of strengths and weaknesses of an enterprise,
- Use of information from the internal and external accounting system for the decision preparation,
- Use of legal provisions, especially of the commercial and craft law, as well as trade and competition laws during analysis of corporate objectives and concepts.

In activity “Preparation, conduct and assessment of establishment and takeover activities” skills should be proven which guarantee the ability to prepare, to conduct and to assess

tasks within the framework of establishment and takeover of the enterprise considering personal, legal and economic framework conditions and objectives, and also to substantiate their importance for the corporate concept. During the definition of tasks several of the following qualification contents should be linked:

- Substantiation of importance of personal competences for the success of professional autonomy,
- Presentation and assessment of economic, social and cultural meaning of economy and benefits of membership in economic organizations,
- Demonstration and assessment of possibilities of utilizing consulting services and funding and supporting services during the establishment and takeover of an enterprise,
- Making and substantiating decisions concerning location, size of the enterprise, personnel requirements and also establishment and equipment of the enterprise,
- Development and assessment of a marketing concept for the market launch,
- Preparation and substantiation of an investment plan and financing concept; preparation of a profitability forecast and conduct of liquidity planning,
- Derivation of a legal form from the corporate concept and substantiation of the made decision,
- Use of legal provisions, especially of the civil law and company and tax laws in connection with the establishment or takeover of crafts enterprises,
- Substantiation of necessity of private risk and pension provision, demonstration of capabilities of risk and pension provision,
- Presentation and substantiation of importance of personal aspects and economic and legal components of a corporate concept in connection to each other.

In activity “Development of corporate management strategies” skills should be proven which guarantee the ability to manage the enterprise taking into consideration enterprise-related strengths and weaknesses and also market-related chances and risks, to identify corporate opportunities for growth and to develop corporate strategies. During the definition of tasks several of the following qualification contents should be linked:

- Assessment of importance of organizational structure and process organization for the development of an enterprise; proposal of adjustment possibilities,
- Assessment of development in the field of product and services innovations as well as market conditions, also in the international context, and derivation of growth strategies therefrom,
- Substantiation of application possibilities of marketing tools for the marketing and procurement of products and services,
- Derivation of changes of capital requirements from the investment, finances and liquidity planning; presentation of alternatives of capital procurement,

- Elaboration and assessment of concepts for personnel planning, recruitment and qualification as well as presentation of tools for personnel management and development,
- Consideration of provisions of the labor and social security law during the development of a corporate strategy,
- Presentation of chances and risks of cooperation between enterprises,
- Use of controlling for the development, pursuing, implementation and modification of corporate objectives,
- Presentation of tools for the enforcement of claims and substantiation of use of these tools,
- Presentation and substantiation of necessity of company succession planning, also considering inheritance and family law as well as provisions of tax law,
- Verification of necessity to introduce insolvency proceedings based on enterprise data; demonstration of consequences according to the insolvency law for the continuation or liquidation of an enterprise.

In the compulsory optional area of activity “Use of information and communication technologies” skills should be proven which guarantee the ability to present the enterprise and its services or products with the help of information and communication technologies and to introduce a data protection system considering legal provisions. During the definition of tasks several of the following qualification contents should be linked:

- Demonstration and assessment of possibilities for the design and optimization of websites,
- Use of information and communication technologies, especially for public relations work, marketing and personnel recruitment,
- Introduction and monitoring of a corporate data protection system for the use of information and communication technologies,
- Transaction of online business taking account provisions of online law.

In the compulsory optional area of activity “Utilization of communication and presentation techniques in business transactions” skills should be proven which guarantee the ability to provide customer-oriented consulting service in line with demand and to present work results in a structured manner. During the definition of tasks several of the following qualification contents should be linked:

- Conduct of consultations involving computer-based communication and presentation techniques in line with demand,
- Use of complaints for the improvement of customer relationships,
- Presentation of oneself and of the enterprise.

In the compulsory optional area of activity “Implementation of bookkeeping with the aid of customary software” skills should be proven which guarantee the ability to register and verify business transactions in the accounting system manually and in the electronic form. During the definition of tasks several of the following qualification contents should be linked:

- Preparation, verification and assignment of documents,
- Compiling, keeping and verifying cash account book,
- Preparation of payroll accounting,
- Cooperation during the preparation of the annual statement of accounts.

In the compulsory optional area of activity “Implementation of project management” skills should be proven which guarantee the ability to demonstrate implementation possibilities of projects and also to structure and to conduct projects in a process-oriented manner. During the definition of tasks several of the following qualification contents should be linked:

- Initiation and definition of the project,
- Project planning,
- Control and management of project implementation,
- Putting together and managing a project team,
- Conclusion of the project.

Conduct and duration of the examination

For every part of examinations complex situational tasks must be prepared. For each part of the examination at least one task must be set.

Examination tasks must be processed in writing.

Every part of the examination lasts for two hours.

If maximum two parts of the examination were assessed with “insufficient” so for each of these parts of the examination an oral supplementary examination can be conducted. If one of the parts of examination was assessed as “unsatisfactory”, a supplementary examination is excluded. The oral supplementary examination has to be conducted relating to the situation and each part of examination should last maximum 20 minutes for the examinee. When determining the result for the corresponding part of the examination the assessment of the written examination work and the assessment of the supplementary examination must be weighted at a ratio 2:1.

The examination is passed if the examination work in each of the part of the examination was assessed with at least “satisfactory”.

Based on grades which were acquired during the four parts of the examination the arithmetic mean has to be obtained and the overall grade has to be derived therefrom.

An examination which has not been passed can be repeated twice.

The master craftsman’s examination, part IV “Vocational education and training knowledge”, can be also conducted in the form of a certified trainer’s ability test. A corresponding examination regulation was issued as Ordinance on Trainer Aptitude by the Federal Ministry of Education and Research and published in the Federal Law Gazette for the year 2009, part 1, No. 5, issued in Bonn on January 30, 2009⁵.

⁵ https://www.gesetze-im-internet.de/ausbeignv_2009/BJNR008800009.html

Ordinance on Trainer Aptitude

Vocational and vocational training aptitude

The vocational and vocational training aptitude includes the competences for the independent planning, conduct and control of vocational training in the following spheres of activity:

- Verification of educational requirements and planning of the training,
- Preparation of the training and cooperation during recruitment of trainees,
- Conducting training and
- Conclusion of training.

Spheres of activity

The sphere of activity “Verification of educational requirements” includes vocational and vocational training aptitude to verify educational requirements and to plan the training. Thereby trainers are able to

- present and to substantiate the advantages and the benefits of company-based training,
- contribute during planning and decision-making concerning the company training needs based on legal, contractual and company framework conditions,
- present structures of the vocational training system and its points of intersection,
- select training professions for the enterprise and to substantiate this,
- examine the aptitude of the enterprise for the training in the profession requiring training and if and to what extent training contents can be conveyed using measures outside of the educational institution, especially training in association, inter-company and external vocational training,
- evaluate possibilities of utilization of measures aimed at the preparation for the vocational training and also
- agree tasks of those who cooperate during training considering their functions and qualifications in the company.

The sphere of activity “Preparation of the training” includes vocational and vocational training aptitude to prepare the training taking into account organizational and also legal aspects. Thereby trainers are able to

- prepare a corporate training plan based on training regulations which is especially oriented at job-specific working and business processes,
- consider the possibilities of cooperation and codetermination of corporate interest groups in the sphere of vocational training,
- determine the cooperation needs and to agree the contents and the organization with cooperation partners, especially vocational school,
- use criteria and methods for the selection of trainees also considering their diversity,
- prepare vocational training contract and to arrange for the registration of the contract with a competent authority and also

- check possibilities if parts of the vocational training can be conducted abroad.

The sphere of activity “Conducting training” includes vocational and vocational training aptitude to encourage independent learning in job-specific work and business processes in an activity-oriented manner. So, trainers are able to

- create learning-friendly conditions and a motivating learning culture, give and receive feedback,
- organize, to arrange and to evaluate the probation period,
- develop and to arrange corporate learning and working tasks from the corporate training plan and job-specific work and business processes,
- select training methods and media according to specific target groups and to the situation,
- support trainees in case of learning difficulties through individual arrangement of training and study advice, if necessary to provide training support and to verify the possibility of extension of the period of training,
- make additional proposals to trainees concerning training, especially in the form of additional qualifications and to verify the possibility of reduction of the training period and early admission to the final examination,
- promote social and personal development of trainees, to identify problems and conflicts in a timely manner and to work towards the solution,
- determine performance results and to assess them, to assess the performance of third parties and results of examinations, to conduct assessment interviews, to draw conclusions related to further course of training and also
- promote intercultural competences.

The sphere of activity “Conclusion of training” includes vocational and vocational training aptitude to lead the education to the successful conclusion and to show to the trainee prospects for his vocational further training. So, trainers are able to

- prepare trainees for the final or apprenticeship examinations considering examination dates and to lead the training to the successful conclusion,
- take care of the registration of trainees for examinations with the competent body and to instruct them about peculiarities relevant to the conduct of examination,
- cooperate during preparation of written certificate based on performance evaluation and
- inform and to consult trainees about ways of professional development and possibilities for vocational further training.

Evidence of aptitude

The aptitude must be proven during the examination. The examination consists of a written and a practical part. The examination is passed if each part of the examination was evaluated with “satisfactory”. Within the examination procedure the examination which has not

been passed can be repeated twice. A passed part of the examination can be credited thereby.

During the written part of the examination case-based tasks from all the spheres of activity must be processed. The written examination must last for three hours.

The practical part of the examination consists of a presentation of a training situation and a professional discussion with the duration of maximum 30 minutes in total. For this purpose, the examination participant selects a job-typical training situation. The presentation should not exceed 15 minutes. The selection and the design of a training situation must be explained during the professional discussion. Instead of presentation a training situation can be conducted also in practice.

1.3 Latvia⁶

The examination of crafts masters in Latvia takes place according to the law “About craftsmanship” (1993).

Crafts education is regulated by:

- “Crafts education conception of Republic of Latvia” (1992)
- Crafts education conception acknowledged by Ministry of Education (1992)
- Latvian Chamber of Craft’s
- “Organization of crafts education in Latvian Chamber of Crafts”
- “Crafts masters’ examination regulations”

Rules for the applicants to the crafts master’s qualification:

- secondary education,
- journeyman’s diploma,
- or certificate of finishing a master’s school or a corresponding program in one or more vocational schools,
- 3 - 4 years of practical work experience after receiving the journeyman’s diploma or 8 years of practice in the craft, if applicant does not have a journeyman’s diploma.

Requirements to obtain the master’s diploma:

- a) Taking part in Latvian Chamber of Crafts’ organized future master training and completing the corresponding tests, resulting in receiving Latvian Chamber of Crafts’ certificate for completing the course,
- b) Passing the qualification examination in the corresponding craft.

The qualification examination is split in two parts:

First part – masterpiece and working methods

⁶ Prepared by the Partner Latvian Chamber of Crafts

Second part – theoretical knowledge of the craft

After completing both parts – master training courses and crafts examination – the person is awarded with a crafts master diploma.

According to the current state the Latvian Chamber of Crafts intends to carry out the MASTER examination based on the following MASTER training course:

- 1) Company management and legislation – 72 hours;
- 2) Pedagogy – 72 hours. This is the current minimum in Latvia needed for a crafts master to be able to work in an educational institution. Together with the Latvian Chamber of Crafts' training certificate, the future master receives a certificate of “completion of vocational pedagogy training program that corresponds to 72-hour amount” (continuing education program) from partner Riga Technical University;
- 3) Craftsmanship history – 45 hours;
- 4) Craftsmanship organization – 10 hours;
- 5) Design basics – 26 hours;
- 6) Ergonomic basics - 5 hours;
- 7) Crafts theory – number of hours can vary depending on the craft – up to 150 – 200 hours.

1.4 Lithuania⁷

Formal VET training programs

A qualification is awarded to a person who has obtained all the competences required as defined in the respective VET standard or sectoral qualifications standard; or, in the absence of these, in a VET program included in the study, training programs and qualifications register.

In 2015 the new regulation, „Description of assessment procedure of an individuals acquired competences “, was issued in Lithuania. Along with other issues, it introduced the new definition for final qualification examinations which is „final assessment of competences “.

The organization process of the final assessment, the composition of the assessment board and the issue of the documents are regulated by the Ministry of Education and Science in accordance with the established procedure.

Evaluation of the competences acquired by VET graduates is detached from the training process. Organization of the final assessment of competences (former final qualification examination) acquired through formal, non-formal, work-based or informal learning is delegated to specifically-accredited institutions. These include social partners (such as Chambers of commerce, industry and crafts, Labor market training centers, craft associations, trade unions, etc.). Currently, there are 28 accredited institutions in Lithuania.

⁷ Prepared by the Partner Public Institution Vilnius Builder Training centre

The accredited institutions are responsible for the development of the tasks for assessing the theoretical and practical skills of the candidates. They also form the Assessment Board composed of not less than three competence evaluators: a trade union or employee representative of the relevant profession, an employer 's representative and a profession teacher (not directly involved in the training process of the candidate).

The final assessment of competences includes:

- assessment of theoretical knowledge (a multiple-choice test);
- assessment of practical skills (a practical task).

For assessment of the theoretical knowledge a multiple-choice test consisting of, at least, 200 questions from all activity areas included in the Qualification Standard is developed. 100 questions are selectively chosen for the examination. Not more than 4 hours (240 min.) are allocated for completion of the test.

The person, whose theoretical part of the assessment test is assessed as satisfactory (4-10), is sent to a practical skills assessment, which takes place on the same or on the following working day. Theoretical knowledge assessment test scores are calculated according to the percentage of questions answered: 100-91 percentage of correct answers - 10 points, 90-81 - 9 points, 80-71 - 8 points, 70-61 - 7 points, 60-51 - 6 points, 50 -41 - 5 points, 40-31 - 4 points, 30-21 - 3 points, 20-11 - 2 points, 10-1 - 1 point.

For the assessment of practical skills at least 3 tasks are prepared, from which 1 practical skills assessment task is selected for the candidate and it should be performed within 6 hours (360 min.). The candidates demonstrate their skills in the construction site, enterprise, or at the Sectoral practical training centre of a VET institution. The Assessment Board evaluates the performance of the task on the same day.

Qualifications are awarded, and VET diplomas are issued by VET providers once they have obtained the assessment results. Graduates whose competences are considered sufficient to receive a qualification are issued with vocational qualification certificates (diplomas) showing the respective LTQF/EQF levels.

Non-formal VET training programs

The non-formal VET programs follow the same requirements for final assessment of competences, with the exception that the final assessment can be organized by a VET provider (with participation of social partners) and not necessarily by the accredited institution.

The VET certificates (diplomas) issued upon successful completion of the training programs and final assessment of competences are recognized by the state and by the employers.

1.5 Norway⁸

The Norwegian Electric Installation companies and their Federations have a longstanding record of sound, professional and marked-oriented education and training. The ambitions of the profession are to be among the very best professions in Norway about quality of training and vocational education at apprenticeship level, further education and management training and education. Unlike most countries inside the Hanse Parliament, the Norwegian Electric Installation Federation decided, very early, to build up their training and education outside the craft chambers. One consequence of this was that their advanced technical/management education was not part of the Norwegian legislation of master craft, including the master education of today.

The Norwegian legislation on electrical controls dates to 1929. From that time, regulations on qualifications and education was established. As shown below, their ambitions about the level of education and their capacity to make their candidates able to meet marked demands in practical as well as theoretical terms, are very high. The level of qualifications of today also set the standards, when applications from European companies seek to enter the Norwegian market; 60 percent of applications are rejected.

To make sure that the Norwegian and other qualified companies maintain their level of professionalism, a thorough, long-term cooperation with the Directorate for Civil Protection and Emergency Planning, the Norwegian Agency for Quality Assurance in Education (NOKUT), and with Standards Norway has been in place.

Structure

After having successfully concluded 4 years of vocational education and training and 2 years of employment as electrician, the candidate is qualified to apply for education at a 2-year Technical College (German: Fachschule) This education complies with Norwegian Codes of Standards, of

- 1) internal controls, including fire prevention, dealings with emergency situations and security,
- 2) quality control,
- 3) workmanship and materials,
- 4) guarantees,
- 5) terms and settlement of disputes and
- 6) NOKUT.

Electric Installation is one of totally five professions linked to electricity, communication and energy. After successfully ending the 2-year education, with exams, and 3 years of occupation in a related and corresponding workplace, the candidate is qualified to install and maintain installations. He/she obtains an authorization, observed, not only by the Directorate for Civil Protection and Emergency Planning, also by other public bodies, such as

⁸ Prepared by Partner Nordic Forum of Crafts

the Consumers Boards, and private actors. The candidate qualifies for 120 study points (fs = fachschule points) with exams for each topic.

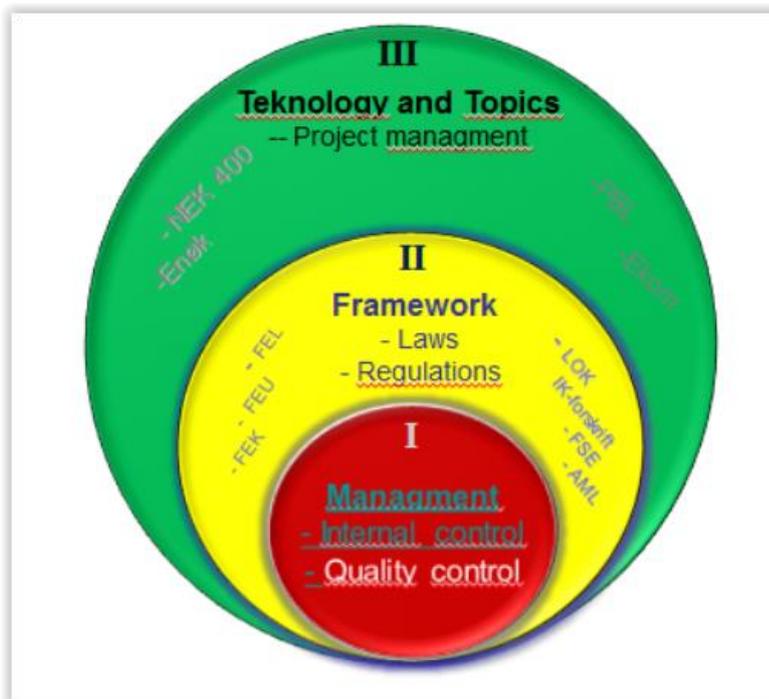
First year:

Foundation topics:	26 fs
Norwegian, English, communication:	10 fs
Mathematics, physics:	10 fs
Management, economy, marketing:	14 fs

Second year:

Advanced topics, energy production, distribution, installation:	21 fs
Automation, engineering, drawing:	20 fs
Local topics	10 fs
Candidate selection of main project:	9 fs

Demands for qualification for managers/technicians of Electro installation companies.



The final authorization exam is administered by the Directorate for Civil Protection and Energy Planning (DBS).

The structure of education combines the theory with occupation-related practical training. The European Credit system for Vocational Education and Training (ECVET) level 5 and 6 is a foundation. The education and training in management for positions within this field of work demands of the candidate that he/she

A Choose a topic, and make a project plan.

B Describe the project, how the tasks are to be carried out and present it for recognition by the teachers before start-up.

C The topic contains documentation practical approaches and inventions, including management experience and gains.

D Documentation of progress and own role and result of work.

E Written documentation, possibly linked to other forms of documentation, including products, photos and web.

Internal Controls

The Directorate of Civil Protection and Emergency Planning has instructed the companies to adopt an ongoing, internal checklist of a total of 36 control points. The aim of these controls is to comply with instructions for systematic health, environment and security in the companies. Each of the 36 control points is founded on specific Norwegian law and regulations, the points are - furthermore - linked to procedures, inside or outside the company, and carries instructions and references to related schemes, routines and documents. I would like to include examples:

No 2 states that the company must be certain that employees have sufficient knowledge and capacities of systematic health, environment and security dealings (HES?), including information on updating. For this point 2, the control contains reference to legal regulation, instructions for in-company updated HES, link to service update of the Electric Federation, and finally report and possible needs for alterations.

No 12 and 13 states control routines for employees with vocational and technical education from EES-counties (including EU). Have applications been duly dealt with and controlled?

No 22, 23 and 24 state that the company instruct, train and establish routines when faced with accidents and incidents that might cause damage and hurt employees, including risk assessment for a sole contract of for the company as such.

No 29 calls for final control of the contract, including reference to risk assessment and evaluations.

The reasons behind these thorough measures are obvious to you all good people in the Hanse-Parlament project. The costs of failures to buildings and installations due to mistakes in the electrical and electronic fields are way too high to accept - not only to people and families who suffer a fire, also to private and public owners and employees, to insurance companies and indirectly, to all of us.

1.6 Poland⁹

The master examination is divided into two stages:

Practical stage of the examination comprises the independent execution of examination tasks, which demonstrates practical skills of a candidate.

⁹ Prepared by Partner District Guild of Crafts Small and Medium Enterprises – Employers in Wejherowo

Theoretical stage of the examination is divided into a written and oral part.

A candidate answers questions that check the knowledge of theory.

1. The written part covers the following topics:

- professional accounting,
- business activity statements of record keeping,
- professional drawing,
- occupational health and safety and fire protection principles,
- basic environmental protection principles,
- basic provisions of labor law,
- basic issues of commercial law and business administration,
- basic psychology and pedagogics,
- teaching methodology.

The written part cannot last less than 45 minutes and longer than 210 minutes.

2. The oral part of covers the following topics:

- technology,
- theory of machines,
- material science.

The oral part of the theoretical exam cannot last longer than 30 minutes.

The Chamber of Crafts issues a master diploma based on positive results of the master examination. The master diploma is a formal acknowledgement of professional qualifications obtained through various education paths and working processes.

The master is required to possess knowledge and skill related to the profession, in terms of employment or own business activity, and personnel training, including juvenile employees and trainees. Required competences include the following:

- independent and correct execution of tasks assigned to a particular profession – comprehensive production of specific goods or delivery of services,
- organization of the workplace,
- organization of work in a small business and the supervision of activities within a specific section – planning and overseeing work performed by a work team,
- planning, organization and supervision of technological processes related to the production of goods or delivery of services,
- responsibility for the staff: managing and leading a work team involved in the production of goods or delivery of services,
- performance of work and execution of tasks according to the occupational health and safety and fire protection rules,
- equal treatment of employees regardless of gender, age and nationality,
- execution of tasks in accordance with environmental protection principles – e.g. waste management, utilization of toxic waste,

- use of technical documentation, standards, manuals, handbooks and other background materials related to works performed within a particular profession,
- knowledge of legal regulations related to a business activity, personnel employment and training,
- development of new product prototypes and modification of service delivery processes,
- attitudes and procedures in crisis and unusual situation occurring within a work team,
- coping with unusual situations, for example resulting from technical, technological or organizational problems which have occurred during the production or service delivery processes,
- assessment of the company's situation or a supervised section, formulation of conclusions and proposals regarding necessary changes,
- execution of unusual tasks – specific orders requiring extensive experience, skills and knowledge within a particular profession,
- responsibility for co-developing the company's image or the image of a work team,
- provision of instructions and advice related to professional development of the company's employees and through participation in different forms of life-long-learning,
- openness and readiness to develop own professional development path through the participation in different forms of life-long-learning,
- evaluation of work and motivation of the staff,
- application of the social conduct rules and professional ethics.

The above-mentioned expectations of the master are verified by defined conditions of admission to take the master examination (general and vocational education, professional experience) and examination requirements that are included in procedures of conducting the master examination.

I. Master's skills profile associated with the profession

A master electrician is able to:

- distinguish between concepts, definitions and values characterizing electric circuits and components, and mechanical constructions,
- apply rules of electrical engineering and mechanics,
- recognize and classify machinery and devices powered by electricity,
- recognize electric and electronic elements and components of machines and devices powered by electricity on drawings, and circuit and wiring diagrams,
- distinguish functions of machines, devices and electric components based on schematic diagrams,
- recognize technical parameters of electric machines and devices based on their parameters and nominal data,

- recognize different measures of protection against electric shock on circuit diagrams of machines and devices,
- calculate and estimate values of electric quantities in direct and alternating current circuits,
- select measuring equipment depending on expected values of measured quantities and the accuracy of measurement of the physical, geometrical and electric quantities,
- prepare cost estimations of used resources and materials, and rendered services,
- select lengths and cross-sections of conductors and cables connecting individual components of electric machines and devices, as well as power leads, considering character of the load and the place of assembly,
- select spare parts for electric machines and devices, consumables and installation equipment, based on catalogue data,
- interpret measurement results of the operation of electric machines and devices,
- select tools to the installation and assembly of electric machines and devices,
- calculate fuse values based on nominal data of the installation, device or electric grids,
- calculate configuration values of thermal overload protection, based on nominal data of motors and their starting methods.

A master electrician is prepared to execute the following professional tasks:

1. Assembly of electric machines and devices,
2. Maintenance of electric machines and devices,
3. Assembly of electric installations,
4. Maintenance of electric installations,
5. Operation of electric machines and installations,
6. Operation of electric machine and installations.

II. Knowledge and skills related to the execution of the above mentioned professional tasks within the following fields

Occupational health and safety

A master electrician is able to:

1. distinguish between concepts related to occupational health and safety, fire protection, environmental protection and ergonomics,
2. distinguish between tasks and powers of the environmental protection and labor inspection institutions and services in Poland,
3. determine rights and obligations of the employee and the employer regarding occupational health and safety,
4. foresee life and health hazards, environmental hazards and risks to the property related to the execution of professional tasks,

5. determine risks related to harmful factors present in the work environment,
6. determine impacts of harmful factors on the human organism,
7. organize workplace according to applicable rules of ergonomics as well as legal requirements of occupational health and safety, fire protection and environmental protection,
8. use personal and collective protective equipment, during the execution of professional tasks,
9. obey occupational health and safety rules and legal regulations related to fire protection and environmental protection,
10. provide first-aid to victims of accidents at workplace and in the states of threat to health and life.

Undertaking and conducting business activity

A master electrician is able to:

1. apply concepts related to market economy,
2. apply provisions of the labor law, data protection law, tax law and intellectual property law,
3. apply legal regulations governing business activity,
4. distinguish between enterprises and institutions from the business sector and links between them,
5. analyses activities carried out by enterprises from the business sector,
6. initiate common undertakings with various enterprises from the business sector,
7. prepare documentation necessary to undertake business activity,
8. compose correspondence associated with conducted business activity,
9. operate office equipment and use software which supports business processes,
10. plan and undertake marketing activities related to conducted business,
11. optimize costs and revenues of conducted business activity,

III. Competence

Personal and social competence

A master electrician:

1. follows the rules of culture and ethics,
2. is creative and determined in executing tasks,
3. foresees consequences of decisions,
4. is open to changes,
5. can cope with stress,
6. develops knowledge and improves professional skills,
7. respects professional confidentiality,
8. is ready to take responsibility for undertaken activities,
9. is able to negotiate the terms of agreements,

10. cooperates in a team.

Pedagogic competence

A master electrician:

1. explains and assesses situations according to the description of issues and problems in the fields of:
 - personality psychology, developmental and educational psychology,
 - psychology of labor,
2. defines learning objectives in the process of vocational training based on the core curriculum and specific curricula,
3. applies and selects appropriate teaching methods,
4. implements the curriculum,
5. uses various didactical measures in the educational process,
6. knows and applies didactic measurement tools and the criteria of assessing a trainee,
7. plans, organizes and performs teaching according to the core curriculum and defined curricula, which provide basis for an examination confirming professional qualifications,
8. keeps records, according to the rules, of pedagogical work performed during practical vocational training in companies.

IV. General occupational knowledge and skills related to the electrician profession

A master electrician:

1. uses concepts from the fields of electrical engineering and electronics,
2. describes phenomena associated with direct and alternating current,
3. interprets physical values related to alternating current,
4. determines quantities which characterize a sinusoidal waveform,
5. applies the rules of electrical engineering to calculate and estimate values of electric quantities in electric circuits and electronic systems,
6. recognizes element and electric and electronic systems,
7. makes schematic and wiring diagrams of electric and electronic systems,
8. distinguishes between parameters of components and electric and electronic systems,
9. uses technical drawing during installation and assembly works,
10. selects tools and measuring devices, and performs mechanical assembly of electric and electronic components and devices,
11. performs manual-processing works,
12. defines functions of components and electric and electrical systems based on technical documentation,
13. connects components and electric and electronic systems based on schematic and wiring diagrams,

14. chooses methods and equipment to measure parameters of electric and electronic systems,
15. takes measurements of electrical quantities of components, electric and electronic systems,
16. presents results of measurements and calculations in the tabular and graphical form,
17. uses technical documentation, catalogues and manuals and adheres to standards,
18. uses software supporting execution of tasks.

V. Skills related to the execution of occupational tasks in the electrician profession

Assembly of electric machines and devices

A master electrician:

1. classifies electric machines and devices according to specified criteria,
2. determines technical parameters of electric machines and devices,
3. distinguish between parameters of components and sub-assemblies of electric machines and devices,
4. recognizes electric machines and devices and their components,
5. distinguishes between manufacturing materials used in electrical machines and devices,
6. recognizes power supply, control and fuse systems of electric machines and devices, and their elements,
7. recognizes electric wires and cables,
8. determines purpose of electric machines and devices,
9. determines functions of components and sub-assemblies used in electric machines and devices,
10. reads, makes drawings and diagrams of electric machines and devices,
11. selects tools to assembly electric machines and devices,
12. performs mechanical assembly of electrical and electronic components,
13. assembles power supply, control, regulation and fuse systems of electric machines and devices based on documentation,
14. checks compliance of the work with documentation,
15. measures parameters of electric machines and devices.

Maintenance of electric machines and devices

A master electrician:

1. recognizes spare parts of electric machines and devices,
2. localizes typical defects of electric machines and devices,
3. applies maintenance rules of electric machines and devices,
4. plans the order of activities during the disassembly and assembly of electric machines and devices,

5. takes measurements of supply voltage, coil resistance and insulation resistance,
6. replaces used and damaged components and sub-assemblies of electric machines and devices,
7. replaces damaged components of control systems and fuses in electric machines and devices,
8. checks the correctness of performed installation of the control systems and fuses in electric machines and devices on the basis of documentation,
9. inspects and maintains electric machines and devices,
10. checks the operation of electric machines and devices after installation and maintenance.

Assembly of electrical installations

A master electrician:

1. recognizes wiring used in electrical installations,
2. recognizes installation equipment,
3. recognizes sources of light and luminaire,
4. defines technical parameters of electric installations and installation equipment,
5. performs electrical installation assembling works according to rules set for residential and industrial buildings,
6. draws a wiring diagram of the installation,
7. performs wire routing with the location of installation equipment, based on a diagram,
8. chooses tools for assembling various types of electrical installations,
9. makes connections between electrical components according to a schematic and wiring diagram,
10. checks the compliance of electric installation with the diagram,
11. takes measurements of installation and fuse parameters according to the instruction,
12. checks the operation of electrical installation after the assembly.

Maintenance of electrical installations

A master electrician:

1. respects the rules and defines the scope of maintenance works on an electrical installation,
2. recognizes typical faults of an electrical installation,
3. chooses spare parts for electrical installation components, based on catalogue data,
4. selects tools for assembling and disassembling components of an electrical installation,
5. chooses meters to measure parameters of electric installations,
6. checks the continuity of phase and protective conductors,
7. takes measurements of electrical installation parameters,
8. replaces damaged wiring and components of electrical installations,

9. checks the performance of measures reducing the risk of electric shock,
10. performs maintenance works on electrical installations according to documentation.

Operation of electric machines and devices

A master electrician:

1. defines performance requirements for electric machines and devices,
2. organizes and supervises works related to the operation of electric machines and devices,
3. chooses meters to measure parameters of electric machines and devices,
4. determines the impact of components and sub-assembly's parameters on the performance of electric machines and devices,
5. follows the rules of locating faults and methods of replacing damaged components and sub-assemblies of electric machines and devices,
6. chooses spare parts of electric machines and devices,
7. chooses overcurrent protection devices for electric machines and devices,
8. selects, installs and checks the performance of measures protecting against electric shock,
9. locates and eliminates defects in electric machines and devices,
10. assesses the technical condition of electric machines and devices.

Operation of electrical installations

A master electrician:

1. defines performance requirements for electrical installations,
2. organizes and supervises works related to the operation of electrical installations,
3. selects, installs and checks the performance of measures protecting against electric,
4. follows the rules of locating faults and methods of replacing damaged components of electrical installations,
5. determines the impact of parameters of wiring and installation equipment on the performance of electrical installations,
6. chooses wiring and cables, and installation equipment for assembling electrical installations,
7. chooses overcurrent protection devices for electrical installations,
8. select meters to take commissioning and performance measurements of electrical installations,
9. assesses the technical condition of electrical installations based on inspections and measurements,
10. locates and eliminates defects in electrical installations.

VI. Equipment for examination posts

The practical stage of the master examination takes place at a company or a school workshop, which provide necessary organizational and technical conditions to execute examination tasks by a candidate. Practical stage cannot be shorter than 120 minutes and cannot exceed altogether 24 hours within 3 days of examination.

Necessary equipment of the examination post to execute examination tasks in the profession of an electrician includes the following:

The room should comply with the rules of occupational health and safety and protection against electric shock. A measurement and control bench with a five-wire TN-S network, protected by an independent residual current circuit breaker. An assembly bench with a built-in earthed socket-outlet, „a wall” for assembling an installation. A cabinet with electrical equipment and tools necessary for assembling an electrical installation and a switchboard in accordance with documentation. A toolkit: a toolbox, a manual hand press, cable makers. Materials: cables, light switches, luminaires, artificial light sources, sockets with a protective earth, circuits breakers with appropriate characteristics, residual current circuit breakers, plastic casing of switchboards, copper comb bus bars and connectors of appropriate colors, four-pole switch disconnectors, surge arresters. An insulation resistance meter, an AC voltmeter, an AC ammeter, a set of linear potentiometers. An assembly bench for electrical connections with a mounted vise.

A cabinet with materials, line and cable equipment, tools for suspending overhead lines performing assembling works on cable lines. A toolkit: a cable cutter, a mechanical crimping tool with a set of jaws, a torque wrench. Low-voltage insulated cables on a reel, sections of insulated and PCV sheathed low-voltage power cables of various cross-sections, hanger hooks, tensions clamps, cable connectors, insulation piercing connectors, terminal lugs, heat shrink cable joints, expansion wedges, rollers, steel cable, cable stockings, cable grip clamps, a tensioning instrument with a dynamometer, insulated surge arresters with insulation piercing connectors. An insulation resistance meter, a multimeter to test the continuity of wires. A handbook, sag and tension tables for low-voltage insulated cables. Machinery and equipment manuals. Personal protective equipment. A first aid kit.

VII. Conditions of admission to the master examination

A chamber of crafts admits a candidate to the master examination under one of the following conditions:

A candidate has graduated from secondary school and possesses a journeyman certificate, or any equivalent vocational education and training certificate in the profession in which the examinations is to be taken. The candidate should also document:

a. vocational experience of at least 3 years in the profession after obtaining vocational qualifications,

b. vocational experience of at least 6 years in the profession – i.e. this period may include work performed before and after obtaining vocational qualifications.

2. A candidate has graduated from secondary school and is able to document vocational experience of at least 6 years in the profession, obtained while conducting own business activity.

3. A candidate has graduated from secondary school and possesses a journeyman certificate, or any equivalent vocational education and training certificate in an occupation that falls within scope of the profession in which the examination is to be taken. The candidate should also document vocational experience of at least 3 years in the profession after obtaining vocational qualifications,

4. A candidate has graduated from secondary school and possesses a master diploma in an occupation that falls within the scope of the profession in which the examination is to be taken. The candidate should document vocational experience of at least 1 year after obtaining master qualification.

5. A candidate has graduated from secondary school, passed matriculation exams and gained vocational qualifications in an occupation that falls within the scope of the profession in which the examination is to be taken. The candidate should document vocational experience of at least 2 years after obtaining vocational qualifications.

6. A candidate has graduated from technical university in the specialization that falls within the scope of the profession in which the examination is to be taken. The candidate should document vocational experience of at least 1 year after obtaining an academic degree.

After the verification of documents confirming that the candidate meets requirements, a chamber of crafts appoints an examination committee that comprises a chairperson and 3 members. A secretary of the examination committee informs the candidates about the practical and written examination at least 14 days prior to the date of the examination.

Candidates obtain separate marks from the theoretical and practical stage of the master examination, which are added to give the final result.

If a candidate failed at least one examination task, then the overall result of the master examination is negative. The candidate may take a correction exam from the theoretical or oral part, which he/she failed. However, after 2 years, the candidate is required to pass the full master examination.

A candidate, who has taken a pedagogy training for apprenticeship instructors, is released from the two parts of the theoretical stage of master examination, i.e. basic psychology and pedagogics, and teaching methodology.

Information about master examination standards in the electrician profession in Poland is based on standard no. 86/m for the occupation classification code 741103 (electrician), issued by the Polish Craft Association.

2. Concept for the Examination Regulations

2.1 Quality requirements for examinations in vocational education and training

Testing prerequisites;

- testing shall be objective;
testing must ensure the same basic conditions for candidates during examination;
it shall safeguard equal evaluation standards; different examiners shall interpret comparable results on an equal basis
- unambiguous and precise language
in examination tasks, documented and well-established (technical) language shall be used, thus avoiding blurred or misleading terms
- avoiding one-sided topic concentration;
paying attention to the verification of the exam-relevant content range and no over-emphasizing of, for instance the examiner's favourite topics
- verification of the overreaching professional competence;
examining shall be based on abilities, skills and knowledge that will translate to excelling in the relevant practice areas
- delivery of reliable results
- exam results should be as far as possible without measuring errors, such as shift towards the centre, halo effect, severity or leniency errors
- examining of content-wise relevant issues only;
theoretical requirements = theoretical exam;
practical requirements = practical exam
- transparency;
ensure that candidates know in advance the examination requirements
- economic viability;
examinations are to be conducted efficiently with regard to cost/benefit considerations (output/input ratio is what matters most)

1.2 Key aspects of master examination rules on the example of electrical engineering

a) Test objective

The Master's degree for the title "electrical engineer" states that the candidate shall be able to single-handedly lead a company, to assume managerial tasks in the areas of technology, business administration, human resource management and development, to organise training and to independently implement his/her professional competence by meeting contemporary challenges in the relevant areas.

b) Admission criteria

- successful completion of at least three-years of vocational training in the relevant/related occupation. In case of shorter duration of studies – proof of professional activity to provide evidence of at least three years in total;
or: at least five-years of professional activity in the relevant/related occupation
or: bachelor studies in the occupation-related specialist area of the master training.
- completion of Part B1 education of the master training: business administration, law and management
- completion of Part B2 education of the master training: occupational and work-educational knowledge

c) Key aspects

For the master's examination with regard to the title “electrical engineer”, the following specific activities, skills and abilities are assigned to individual focus areas representing integral/comprehensive qualifications:

1. focus on energy and building technology
2. focus on communication and safety engineering
3. focus on system electronics

d) Structure, examination period and passing the examination of Part A1 “Occupation-related practical training”

Part A1 of the master's examination includes the following examination areas:

- a master examination project and a specialised subject-related interview
- situation-based exercise.

Delivery of the master examination project should be completed within four working days, while the technical discussion should not exceed 30 minutes. The delivery of the situation-based exercise should not exceed eight hours.

The master's examination project, technical discussion and the situation-based exercise are evaluated separately. The examination result of the master examination project and the technical discussion is weighted in a ratio of 3:1. Both elements then form an overall evaluation. This overall evaluation regarding the examination result of the situation-based exercise is weighted in a ratio of 2:1.

The master examination project is to be delivered in the chosen technical area (see c).

Minimum requirement for the passing of Part A1 of the master's examination is an overall satisfactory examination performance

e) Structure, examination period and passing of the examination Part A2 “Occupation-specific theory”

The objective of passing Part A2 is to prove the ability of the candidate to analyse and assess problems and to identify and document appropriate solutions by combining

safety, process and materials engineering, and technological, mathematical and economic knowledge.

The examination subjects are:

1. electrical and safety engineering,
2. order processing,
3. business administration and organisation

Each of the examination subjects contains at least one obligatory case-oriented exercise.

The examination in Part A2 is in writing and it should not exceed nine hours.

An oral supplementary examination can be introduced for one of the examination subjects, if this enables the passing of Part A2.

Minimum requirement for the passing of Part A2 is an overall satisfactory examination performance.

- f) Objective, structure, content, duration and passing of Part B1 “Business administration, law and management”

The examination in Part B1 is to prove the candidate’s professional competences in analysing and assessing managerial, commercial and legal challenges as a business owner, manager or executive, as well as the candidate’s ability to identify and document possible solutions, while taking into account current developments.

Each of the following topic areas demands solving at least one complex topic-related task.

1. evaluation of competitiveness of companies
2. preparation, implementation and evaluation of start-up and take-over activities
3. designing corporate governance strategies

The examination in Part B1 is in writing and lasts two hours for each topic area.

The overall evaluation of Part B1 is calculated from the arithmetic average of the individual topic-related evaluations.

An oral supplementary examination can be introduced for one of the examination subjects, if this enables the passing of Part B1.

Minimum requirement for the passing of Part B1 is an overall satisfactory examination performance.

- g) Objective, structure, content, duration and passing of Part B2 “Occupational and work-educational knowledge”

The examination in Part B2 is to prove the candidate's professional and work-educational knowledge and his / her required competences to properly conduct training of apprentices (trainees) and ability to self-handily plan and arrange and supervise vocational training.

The examination consists of a written and a practical part.

In the written part of the examination, case-related tasks are solved for each of the following topic areas:

1. review of the training requirements and training planning
2. training preparation and recruitment of trainees
3. training implementation
4. completion of the training

The practical part of the exam consists of;

- a presentation or practical delivery of a training situation, and
- a technical discussion.

For presentation or for the practical performance, the candidate selects an occupation-specific training situation. The selected area and design of the training situation are explained in the technical discussion.

The duration of the written part of the exam is three hours. The practical part of the exam should not exceed a maximum of 30 minutes.

The evaluation of the written part of the examination is calculated from the arithmetic average of the individual topic-related evaluations. For the overall evaluation, the written and practical parts of the examination are equally weighted.

An oral supplementary examination can be introduced for one of the examination subjects, if this enables the passing of the written examination.

A prerequisite for the successful passing of Part IV of the master's examination is at least a "sufficient" evaluation of the written and the practical part of the examination.

h) Denomination of the titles

Each part of the master training is examined separately and completed with an independent, recognised further training graduation.

- The successful passing of the examination of Part A1 leads to the recognised advanced training title "Recognised Technician".
- The successful passing of the examination of Part A2 leads to the recognised advanced training title "Technical Specialist".
- The successful passing of the examination of Part B1 leads to the recognised advanced training title "Business Administrator".
- The successful passing of the examination of Part B2 leads to the recognised advanced training title "Instructor".

A failed examination can be conducted twice.

In case of successful passing of all four examinations within ten years, the master title for the respective occupation will be assigned.

3. Regulations for the master craftsman examination in electrical engineering

Within the “Master BSR” project, a uniform master training for the Baltic Sea Region is developed and implemented, taking the example of the master training program for electrical engineers. Accordingly, examination regulations for this profession are drafted.

The master craftsman exam consists of four following independent test parts:

- occupation-specific exam parts
 1. Examination in mastering the usual work
 2. Examination in the relevant theoretical knowledge
- uniform examination parts for all professions
 3. Examination in the relevant business, commercial and legal knowledge
 4. Examination in the relevant occupational and work-pedagogical knowledge.

To use the following examination regulations for various related occupations, respective job-specific examination parts – Part 1 and 2 – are to be designed for each respective occupation.

Section I Uniform provisions

Article 1. Admission requirements and exemption from examination parts

(1) Following are uniform requirements for admission to the Master's examination:

1. Successful completion of at least three years of professional training in the respective or related profession. In the case of shorter training periods: proof of a professional activity, so that a total of at least three years can be evidenced. Or
2. Professional activity of at least five years in a relevant or related profession. Or
3. Successful completion of a degree course in a discipline with relevance to the respective profession of the Master's training.

(2) Skills, knowledge and abilities already acquired in other qualification measures, equivalent to a Master's training, are recognised for the Master's training and may lead to the exemption from specific test parts, for example:

- a) training as a specialist (*Fachwirt*) or certified business administration specialist with exemption from test Part B1 of the Master's examination.
- b) completion of a recognised pedagogic qualifying examination with exemption from Part B2 of the Master's examination.
- c) content-wise appropriate degree courses with complete or partial exemption from test Parts A2, B1 or B2 of the Master's examination.

Article 2. Occupational profile for the electrical engineer in Master's examination

(1) The Master's degree in electrical engineering proves whether the candidate is able to lead a company independently, to carry out managerial tasks in the relevant areas of technology, business management, personnel management and development, to conduct trainings and to implement his/her professional competence independently and to adapt to new needs in the respective areas.

(2) For the Master's certificate for electrical engineers, the focus is on energy and building technologies, communications and safety technologies, as well as on systems electronics. The following joint activities, knowledge and skills are attributed as integral qualifications for the Master's examination:

1. Determining customer requirements, advising customers, calculating services and generating offers, conducting order negotiations and setting up contract goals.
2. Assuming responsibility in technical and commercial management, business organisation, personnel planning and personnel deployment, in particular, taking into account occupational training and further training, quality management, liability, occupational safety, data and environmental protection; applying information processing systems.
3. Executing orders, taking into account system engineering technologies, maintenance alternatives, topographical conditions, occupational laws, standards, rules and regulations, personnel requirements and training; order processing and execution, planning and monitoring.
4. Generating documentation, in particular using computer-assisted systems.
5. Considering material properties in planning, designing and during order execution.
6. Developing, planning, manufacturing, programming, parameterising, erecting and maintaining electro-technical systems, in particular taking into account safety and health-relevant precautionary measures; considering and implementing technologies for rational use of energy.
7. Applying measurement and testing techniques, assessing and recording results.
8. Drafting contracts; developing and maintaining standard contracts, in particular service contracts
9. Performing fault and error detection, master measures for the elimination of faults and errors, evaluating and documenting/recording results.
10. Accepting and logging services, delivering them to customers, settling accounts and performing after-sales cost calculation.

(3) The following are specific activities, knowledge and skills attributed as integral qualifications of each respective focus area for purposes of the Master's examination in electrical engineering:

1. Focus on energy and building technologies

Planning, calculating, building, programming, parameterising, erecting, testing, commissioning and maintaining of energy and building technological systems and their components, in particular for generation, transmission, conversion and distribution of electrical energy; earthing, lightning protection, overvoltage protection and antenna systems, lighting, heat, cold and air conditioning systems, building automation, bus technology, signal transmission technology, technologies for rational energy consumption, including relevant electrical and electronic equipment;

2. Focus on communications technologies and safety engineering

Planning, calculating, building, programming, parameterising, erecting, testing, commissioning and maintaining of systems and equipment components of communications and safety engineering, in particular, telecommunications technology, electro-acoustics, data transmission and processing technology, remote control technology, call and signal technology, hazard warning technology, emergency warning system technology, video technology, hospital communications technology, access control technology and time service systems;

3. Emphasis on systems electronics

Planning, calculating, building, programming, parameterising, erecting, testing, commissioning and maintaining of systems electronics equipment and their components, in particular, measurement, control and drive technology, inspecting and metering technology for medical and laboratory applications, as well as methods of system and software integration.

Article 3. Structuring and content of the Master's examination

(1) The Master's examination in electrical engineering trades includes the following independent examination parts:

1. Examination to prove masterly execution of the usual work (Part A1),
2. Examination in the relevant theoretical knowledge (Part A2),
3. Examination in indispensable business, commercial and legal knowledge (Part B1); and
4. Examination in the required occupational and work-pedagogical knowledge (Part B2).

(2) The Master's examination is deemed to have been passed as a whole, if each of the four Parts of the Master's examination were successfully passed. Granted exemption from one of the Parts of the Master's examination is equivalent to passing of the respective Part.

Article 4. Evaluation/Grading system

(1) The following 100-point scale shall be used for the assessment of examination in the examination areas, subjects, and fields of action, further, for practical examination in Part IV, as well as in case of supplementary examinations:

100 – 92 points	for a performance particularly fulfilling the set requirements,
below 92 – 81 points	for a performance fulfilling the set requirements,
below 81 – 67 points	for a performance fulfilling the set requirements in general
below 67 – 50 points	for a performance which has deficiencies yet on the whole still meets the set requirements,
below 50 – 30 points	for a performance which does not meet the set requirements, yet indicates that certain basic knowledge is still available,
below 30 – 0 points	for a performance that does not meet the set requirements and identifying very poor or missing basic knowledge.

The 100-point key shall be also applied in specific evaluation of test achievements gained by their nature within the scope of examination areas, examination subjects and fields of action.

(2) Evaluation for each Part of the Master's examination shall be determined as the weighted average of the test points obtained. Where:

100 – 92 points	mean: very good,
below 92 – 81 points	mean: good
below 81 – 67 points	mean: satisfactory,
below 67– 50 points	mean: sufficient,
below 50– 30 points	mean: insufficient,
below 30 – 0 points	mean: not satisfactory.

(3) Promptly upon examination, the examinee obtains a written notification with legal remarks/remedies about the results of the examination in each Part of the Master's examination and the grade obtained.

(4) A certificate is issued by the Master's examination due board, which has been active last year, stating passage of the Master's examination. The certificate shall include the grades obtained for the Master's examination parts passed, as well as exemptions, indicating their legal basis. The certificate shall be signed by the chairman of the Master's examination board.

Article 5. Re-examination of the Master's examination

(1) Each individual part of the Master's examination may be repeated three times within ten years upon completion of the first exam.

(2) Upon request, the examinee shall be exempted from re-examination in examination areas/subjects, areas of activity or in the practical part of the examination, if in a previ-

ous examination, respective achievements were evaluated with at least 50 points. Exemption is only possible, if the examinee registers for the re-examination within ten years from the date of the written notification regarding the failed examination part.

Section II

Provisions for examination in masterly execution of standard works

Article 6. Special admission requirements

Admission to examination in the mastery of usual work (Part A1), requires the fulfilment of the following conditions:

1. Completion of the course A1 “Occupation-related practical training” as preparation for the Master's examination, or
2. Proof of at least one year of professional activity in the relevant or a related profession. Admission to Part A2 of the Master's examination, in accordance with Article 12.2, requires proof of at least three years of professional activity.

Article 7. Priority areas

For the Master's examination, Part A1, the focus is on energy and building technologies, communications and safety technologies as well as systems electronics; the examinee has to select from one of the respective priorities.

Article 8. Classification, Examination duration and Passage

(1) Part A1 of the Master's examination covers the following areas:

1. A Master's examination project and a related technical discussion,
2. A situation-based exercise.

(2) Execution of a Master's examination project shall not exceed four working days; duration of the technical discussion shall not exceed 30 minutes. Execution of a situation-based exercise shall not exceed eight hours.

(3) Master examination project, technical discussion and situation-based exercise are subject to separate evaluation. Examinations in the Master's examination project and in the technical discussion are weighted with a ratio of 3:1, thus forming an overall evaluation. Then again, with regard to the outcome of the specialist discussion, this overall evaluation is weighted with a ratio of 2:1.

(4) A minimum requirement for the completion of Part A1 of the Master's Examination is an overall satisfactory examination performance, if examination was not rated with less than 30 points in all three Parts, namely in the Master's examination project, in the technical discussion and in the situation-based exercise.

(5) Passing of Part A1 of the Master's examination leads to the recognised advanced training title “Recognised Technician”.

Article 9. Master's examination project

(1) In the selected field, the candidate shall execute a Master's examination project, simulating a client order. A master craftsman's examination board chooses a specific exercise. Examinee's suggestions are to be considered. Prior to the Master's examination project, the examinee shall submit to the Master's examination board a draft for approval, including a timetable.

(2) For the Master's examination project, one of the following tasks are to be executed in the selected focal areas:

1. Focus on energy and building technologies

Designing, computing, planning and calculating an energy and building technologies installation or its components, executing these exercises, and creating a test report.

2. Focus on communications technologies and safety engineering

Designing, computing, planning and calculating a communications and safety systems installation or its components, executing these exercises, and creating a test report

3. Focus on systems electronics

Designing, computing, planning and calculating a communications and safety engineering installation or its component, executing the exercises and creating a test report.

(3) Documents concerning the design, computing, planning and cost calculations shall be weighted with 40%, the exercises performed – with 40% and the test report – with 20%.

Article 10. Technical discussion

A technical discussion is to be held on the basis of the examinations results in the Master's examination project, in which the examinee is to prove full understanding of technical subject-related contexts of the Master's examination project; further, that he/she can substantiate the Master's examination project sequence and that he/she is able to demonstrate subject-related professional problems and their respective solutions with regard to the Master's examination project, always considering latest technological trends.

Article 11. Situation-based exercise

(1) The purpose of the situation-based exercise is to test essential basic knowledge and basic skills that could not be demonstrated or that were verified only inadequately in the Master's examination project.

(2) In order to complete the proof of qualifications for the electrical engineer, the following tasks are to be performed as a situation-based exercise:

1. The following are tasks, if energy and building technology were selected as focus:

Narrowing, identifying, and eliminating faults in communications, safety engineering systems or in the systems' components as well as in systems electronics; calculating systems performance, recording measurement tests and documenting results.

2. The following are tasks, if communications and safety systems technologies were selected as focus:

Narrowing, identifying and eliminating faults in plants or in energy and building systems components as well as in systems electronics; calculating systems performance, recording measurement tests and documenting results.

3. The following are tasks, if systems electronics were selected as focus:

Narrowing, identifying, and eliminating faults in energy and building technology systems or their components as well as in communications and safety engineering; calculating systems performance, recording measurement tests and documenting results.

The overall assessment of the situation-based exercise is calculated as the arithmetic mean of the individual evaluations of the tasks executed, pursuant to paragraph 2.

Section III

Provisions for examination in the required subject-related theoretical knowledge

Article 12. Special admission requirements

Admission to examination in the required subject-related theoretical knowledge (Part A2) is granted upon fulfilling the following conditions:

1. If the comprehensive training course A2 "Occupation-specific theory" was completed as preparation for the Master's examination, or
2. Proof of at least two years of professional experience in the relevant or a related profession can be produced, plus attendance of relevant preparatory course with a minimum of 200 teaching hours. Proof of at least three years' of professional experience, if admission to Part A1 of the Master's Examination was granted, pursuant to Article 6.2.

Article 13. Structuring, Examination Period and Passage

(1) Examination in Part A2 is intended to demonstrate the ability to analyse and assess problems, and to identify and document appropriate solutions by combining technological, safety, process engineering, materials engineering, mathematical and economic knowledge.

(2) The following are the examination subjects:

1. Electrical and safety engineering,
2. Order processing,
3. Business administration and organisation.

(3) At least one case-oriented exercise in each of the examination subjects.

1. Electrical and safety engineering

The examinee is to demonstrate that he/she is able to handle tasks and problems of electro technical systems in an electrical engineering company, taking into consideration technical, safety, economic and environmental aspects. He/she shall be able to assess and describe technical facts. In the problem definition, several of the following qualifications are to be combined:

- a) customer requirements analysis,
- b) developing, designing and calculating electrical and electronic circuits, according to functional specifications,
- c) evaluating and correcting circuit diagrams, computer-assisted generating of circuit diagrams,
- d) dimensioning, selecting and proper assigning of mechanical design parts, cables, electrical and electronic supplies and materials,
- e) generating, evaluating and correcting of technical solutions, in particular, taking into account safety and health-related precautionary measures;

2. Order processing

The examinee is to demonstrate that in an order processing situation, he/she is able to initiate and conclude customer-oriented, job-related measures that are crucial for the technological and economic success of an electrical engineering company. In the task setting, several of the following qualifications are to be combined:

- a) evaluating order documents and planning of order processing operations, taking into account the use of materials, equipment, personnel and quality assurance aspects,
- b) generating, evaluating and correcting of technical workflows, in particular, sketches and drawings, including the use of electronic data processing systems,
- c) analysing and assessing licensing requirements,
- d) subcontracting and monitoring the subcontracting process
- e) planning of technical inspections, recording and evaluating data, documenting test results,
- f) pre-calculation and post-calculation;

3. Business administration and organisation

The examinee is to demonstrate that he/she is able to perform managerial and organisational tasks in an electrical engineering company. In the task setting, several of the following qualifications are to be combined:

- a) aggregating work positions to bundled offers, including price calculations,
- b) calculating hourly rates, based on a given cost structure,
- c) generating and applying operational key figures, using predefined models,

- d) planning business development, based on technological progress and market trends,
- e) designing and implementing HR development and HR management concepts,
- f) planning and presenting an operational quality management system,
- g) instructing/briefing of employees in their tasks/functions,
- h) developing marketing measures for customer care and for acquisition of new customers,
- i) describing and assessing information and communications systems with regard to their operational possibilities,
- k) applying occupation-specific laws, standards, rules and regulations,
- l) assessing liability in manufacture, during maintenance and of the service package,
- m) identifying requirements of occupational safety, health protection, data protection and environmental protection; assessing threats and defining hazard prevention measures,
- n) planning and presenting operational, warehouse and construction site equipment, logistics.

(4) Examination in Part A2 shall be carried out in writing. The duration shall not exceed nine hours. A total examination time of six hours per day shall be observed.

(5) At the request of the examinee or at the discretion of the Selection Board, the written test shall be complemented in one of the subjects, specified in Article 2, in an oral exam (supplementary examination), if this allows passage of Part A2 of the Master's Examination. The supplementary exam shall not exceed 20 minutes per one examinee. In the respective examination subject, the results of the written examination and the supplementary examination shall be weighted in a ratio of 2:1.

(6) A minimum requirement for passage of Part A2 of the Master's examination is an overall satisfactory performance. Pursuant to Article 2.1, upon positive test performance, the Master's Examination Board shall issue a certificate to the examinee, containing the results of the examination in the examination subject. If a supplementary examination in an examination subject was evaluated with less than 30 points, examination of Part A2 is deemed to be failed.

(7) Positive test performance in Part A2 of the Master's Examination leads to the recognised advanced training title "Technical Specialist".

Section IV

Provisions for examination in required business, commercial and legal knowledge

Article 14. Special provisions for examination eligibility and examination exemptions

- (1) The admission requirements for examination in required business, commercial and legal knowledge (Part B1) is the completion of the course B1 "Business administration, law and management", as preparation for the Master's examination.

- (2) At the request of the examinee, exemption from Part B1 of the Master's examination shall be granted, if the examinee can prove successful completion of an equivalent training course, stating a recognised final examination. E.g., in particular:
- relevant university studies, e.g. in business management, SME management.
 - relevant recognised advanced qualifications, e.g. "Certified Specialist in Commercial Business Administration".

Article 15. Objective, structure and content of Part B1

(1) Examination in Part III, shall demonstrate the examinee's professional competence as business owner or manager in the fields of action referred to in Article 2.1-3, by displaying competence in analysing and assessing business, commercial, and legal problems and in adequately addressing and documenting them, taking into account current market trends.

(2) At least one complex case-related exercise shall be performed in each of the following fields of action:

1. Competitiveness assessment of enterprises

The examinee shall prove the ability to display competence in assessing and in decision-making about business, commercial and legal competitiveness requirements of a company, including assessment and decision making in the area of HR career planning. The exercise shall combine several of the qualifications listed in points (a) to (f):

- analysing corporate objectives and classifying them into a business objectives system,
- motivating the significance of the corporate culture and of the company image for the company's performance and competitiveness,
- analysing the market position of a company, and motivating potential for success,
- using accounting data for analysis of a company's strengths and weaknesses from the balance sheet and the profit and loss account,
- using data for decision making from internal and external accounting,
- applying legal provisions in the analysis of corporate objectives and concepts commercial and trade law, trade and competition law;

2. Preparing, executing and evaluating start-up and take-over activities

The examinee shall display competence in preparing, executing and evaluating tasks related to a business start-up and business take-over, taking into account personal, legal and business conditions and objectives, as well as competently explain their significance for a business concept. In this exercise, several of the qualifications listed in points (a) to (j) shall be combined:

- motivating significance of personal prerequisites for the success of professional self-employment
- motivating and evaluating economic, social and cultural importance of the craft sector and the benefits of membership in craft organisations,
- exploring and evaluating chances for engaging advisory services, finance and support services for start-ups and business takeovers,

- d) making and motivating decisions regarding the location, size, staffing requirements, setup and equipment of a company,
- e) developing and evaluating a marketing concept for a market launch,
- f) establishing and motivating an investment plan and a finance concept; preparing a profitability forecast and implementing liquidity planning,
- g) deducing and motivating a legal form, depending on the business concept,
- h) applying legal provisions, in particular, civil law and company and tax law, in the context of a craft business set-up or take-over
- i) motivating the need for private risk and pension provision, indicating market possibilities
- j) comprehensively motivating the significance of personal aspects and business and legal components of a business concept;

3. Developing business management strategies

The examinee has to demonstrate the ability to identify operational growth potentials and to develop corporate strategies, taking into account company strengths and weaknesses as well as market-related opportunities and risks of managing a business. For this exercise, several of the qualifications listed in points (a) to (k) shall be combined:

- a) assessing the significance of organisational business structures and workflows; introducing modifications,
- b) evaluating trends in product and service innovation as well as general market conditions, also in the international context, and thus deriving adequate growth strategies,
- c) motivating the use of marketing instruments for sale and procurement of products and services,
- d) identifying changes in capital requirements, depending on investment, financial and liquidity planning; demonstrating alternative forms of capital procurement,
- e) developing and evaluating concepts for personnel planning, recruitment, and qualification measures, as well as presenting tools for HR management and development,
- f) taking into account provisions of labour and social insurance legislation when drafting a business strategy,
- g) presenting chances and risks of inter-company cooperation,
- h) using controlling to develop, pursue, implement and modify corporate objectives,
- i) presenting and motivating tools for legal enforcement of claims,
- j) presenting and motivating the need to plan a business succession, taking into account e.g. inheritance and family law, and tax provisions,
- k) Examining the need to initiate insolvency proceedings, based on company data; indicating insolvency law consequences for the continuation or liquidation of a business.

Article 16. Examination duration and passage of Part B1

(1) The exam in Part B1 shall be carried out in writing and it shall last two hours in each field of action.

(2) The overall assessment of Part B1 is calculated as the arithmetic mean of individual evaluations in the fields of action, pursuant to Article 2.2.

(3) If in at most two of the fields of activity, stipulated in Article 2.2, at least 30 points, however less than 50 points were reached, an oral supplementary examination may be carried out in one of the respective fields of action, if this allows passage of Part III of the Master's examination.

(4) A minimum requirement for passage of Part III of the Master's examination is an overall satisfactory examination performance. Examination of Part B1 is deemed to be failed, if:

1. An action field was evaluated with less than 30 points, or;
2. After supplementary examination, two fields of action were evaluated with less than 50 points.

(5) Passage of Part B1 of the Master's Examination leads to the recognised advanced training title "Business Administrator".

Section V

Provisions for examination in required occupational and work-related pedagogical knowledge

Article 17. Specific admission provisions and exemptions

(1) Admission provision to examination in the required occupational and work-related pedagogical knowledge (Part B2) is a completion of the preparatory course B2 for the Master's examination "Profession and work-related pedagogical knowledge".

(2) At the request of the examinee, exemption from Part B2 of the Master's examination may be granted upon providing evidence of successful completion of an equivalent training course with a recognised final examination, e.g., related recognised advanced trainings certifying qualification to train instructors.

Article 18. Objective, structure and content of Part B2

(1) Examination in Part B2 proves the examinee's professional and work-pedagogical knowledge and competence, required to independently plan, carry out and control proper vocational training of apprentices (trainees).

(2) Examination in Part B2 consists of a written and a practical part.

(3) In the written part of the examination, the examinee shall solve case-related exercises in each of the following fields of action:

1. Review of training requirements and drafting of a training plan

The examinee shall demonstrate the ability to assess and evaluate training requirements, on the basis of corporate, occupational and legal provisions, as well as the ability to plan a

training, including, e.g. taking into account non-job-related training periods. The exercise shall combine several of the qualifications listed in points (a) to (g):

- a) demonstrating and motivating the benefits of in-company training,
- b) planning of corporate training requirements, taking into account legal and collective agreements and the general corporate framework; preparing and making decisions,
- c) presenting structures of a vocational training system and its interfaces,
- d) selecting training professions for a company and motivating the selection,
- e) exploring suitability of a company for training in the selected training professions, in particular, taking into account cooperative, supra-corporate and external training,
- f) exploring and evaluating chances to use preparatory vocational training measures,
- g) coordinating intra-company allocation of responsibilities during training, taking into account functions and qualifications of the training participants;

2. Training preparation and recruitment of trainees

The examinee has to demonstrate the ability to perform all pre-training tasks, to introduce selection criteria for recruiting candidate, and to execute recruitment procedures, including taking into account corporate organisation and workflows as well as legal aspects. In the exercise, several of the qualifications listed in points (a) to (f) are to be combined:

- a) drawing up a corporate training plan, based on training regulations and, in particular, on occupational and typical work-related corporate processes;
- b) presenting and motivating to occupational corporate interest groups the benefits from participation and co-determination in vocational training,
- c) identifying cooperation requirements and organising the content and organisational co-ordination with co-operation partners, in particular, with vocational schools,
- d) applying criteria and procedures for the selection of trainees, taking into account their diversity,
- e) preparing and concluding vocational training contracts and initiating registration with the competent body,
- f) exploring chances to perform vocational training partly abroad;

3. Training delivery

The examinee has to demonstrate the ability to plan and control learning processes in a work-oriented manner as well as the ability to promote independent learning. Job-specific work- and business-related processes shall be hereby considered, as well as possible areas of application and learning requirements of the trainees. The exercise shall combine several of the qualifications referred to in points (a) to (j):

- a) creating learning-friendly and motivating conditions, give and receive feedback,
- b) organising, shaping and evaluating a probationary period,
- c) developing and drafting typical corporate learning and work-related tasks, derived from the company's corporate training plan and from occupational and business-related workflows,

- d) selecting training methods and media for the target group and use them accordingly, if required,
- e) assisting trainees with learning difficulties by individual approach during training and by learning guidance; using training-supportive aids and exploring chances to extend the training period,
- f) exploring and proposing additional training opportunities, in particular supplementary qualifications, for trainees; chances to reduce the training period and early admission to the final or journeyman's exam,
- g) promoting social and personal development of trainees; identifying problems and conflicts at an early stage and endeavour to arrive at an amicable solution,
- h) promoting learning and working in teams,
- i) noting and assessing the performance of trainees; evaluating performance assessments and test results of third parties, performing assessment interviews, drawing conclusions for the remaining part of the training course,
- j) promoting corporate intercultural skills;

4. Training completion

The examinee has to prove the ability to lead the training to a successful end and to point out prospects for further learning and qualification courses. This exercise shall combine several of the qualifications listed in points (a) to (d):

- a) preparing trainees for the final or journeyman's examination, taking into account the examination dates and leading the training to a successful end,
- b) ensuring that the trainees are registered with the competent body and ensuring that trainees know about all relevant exam specifics,
- c) preparing a written certificate based on performance assessments,
- d) informing and advising trainees about possibilities of a corporate career and professional advanced learning possibilities.

(4) The practical Part of the examination consists of:

1. Presentation or practical performance of a training situation and
2. Technical discussion.

For presentation or for practical execution, the examinee selects a job-specific training situation. The selection and draft of the training situation are explained during the technical discussion.

Article 19. Examination duration and passage of Part B2

(1) The written part of the examination lasts three hours. The practical part of the examination shall not exceed a maximum of 30 minutes, whereby the presentation or the practical execution of a training situation shall not exceed 15 minutes.

- (2) The assessment of the written part of the examination is calculated as the arithmetic mean of equally weighted individual evaluations of each field of action. For the overall assessment, the written and practical parts of the examination shall be equally weighted.
- (3) If in each of at least two of the fields of action, referred to in Article 16.3, at least 30 points, however less than 50 points, were reached, an oral supplementary examination may be carried out in one of the respective fields of action, if this allows passage of the written Part B2 of the Master's examination.
- (4) Precondition for passage of Part B2 of the Master's Examination is the evaluation of the written and practical part of the examination, each with at least 50 points.
- (5) Passage of Part B2 of the Master's examination leads to the recognised advanced training title "Instructor".

4. Classification in the Baltic Sea Region Qualification Framework and international recognition

Within the project “Baltic Education” in the program Leonardo da Vinci the Baltic Sea Region Qualification Framework was designed¹⁰. By means of the European Credit Transfer System of Vocational Education and Training (ECVET), this “BSR-QF” provided the basis for the evaluation of two craft occupations – “carpenter” and “painter”. ECVET is a system which allows to characterize qualification (knowledge, skills and competence) by transferable and accumulable learning units and to assign credit points to the learning outcomes. The BSR-QF and the applied ECVET process for the two named occupations formed the basis for the evaluation of the designed course “Advanced training-programme for SMEs: Cradle-to-Cradle”.

4.1 EQF and BSR-QF – an introduction

The Maastricht Declaration of 2004, the Lisbon Strategy of 2000 as well as several other European Union initiatives, and in this context specifically dedicated funding to raise the geographical and labour market mobility and to promote lifelong learning, will yield increased employment and economic growth across EU countries. Rapid social, technological and economic changes along with an aging society make lifelong learning a necessity. For that reason, education is a major component to meet and to achieve the ambitious Lisbon goals. Hence, the European Commission has induced to develop a European Qualifications Framework and to establish National Qualifications Frameworks (hereinafter: NQF) by 2010. The modelling of National Qualification Frameworks lies in the competence of national authorities, whereas the EU-Commission has recommended that the EU Member States implement NQFs. The European Qualification Framework represents a meta-framework and is considered by the European Commission as crucial in meeting European objectives, set out in the Lisbon Strategy.

The main purpose of a qualification framework is to improve transparency, quality and comparability of professional and academic qualification levels across differing education systems and European countries. The EQF itself does not constitute a formal recognition of occupational qualifications. A special feature of Europe is the enormous diversity of educational systems. A prerequisite to make this specificity an asset is to foster transparency.

Transparency can be considered as a fundamental prerequisite for the recognition of qualifications, and it improves comparability. Better comparability between countries are a decisive element to increase labour mobility and to ensure permeability of qualifications, whereby permeability constitutes a prerequisite for lifelong learning.

¹⁰ Hanseatic Parliament: Baltic education, Hamburg 2008

Soon, qualification frameworks must meet these criteria with concrete and well-designed concepts. A qualification framework is an appropriate tool for the development and for classifying qualifications. The European Qualification Framework was adopted in November 2007.

Under the project “Baltic Education”, constructive and fruitful discussions at European and national levels were encouraged by a “Baltic Sea Region Qualifications Framework” (hereinafter: BSR-QF). This BSR-QF should be regarded as a supplement and contribution to the ongoing debate rather than a substitute for the shaping of National Qualifications Frameworks. The project “Baltic Education” has delivered a sizeable contribution to this strategy.

The Baltic Sea Region (BSR) is an area with a considerable number of different countries. These countries share common problems as they endeavour to cope with the same economic and demographic challenges and concerns. It is essential for this region to further develop vocational training, to improve quality and to establish transparency and recognition models. To solve these complex issues, the BSR-QF provides an orientation, allowing for classifications across the whole qualification range and serving as a common ground for constructive discussions, conceptual considerations and individual progress.

4.2 The Baltic Sea Region Qualifications Framework

The BSR-QF comprises eight qualification levels that take into account acquired skills from the European Higher Education Area (EHEA) plus vocational qualifications and competences.

This concept is consistent with the recommendations of the European Commission. Table 1 shows the elaborated proposal for the BSR-QF. The following presents a brief overview of the respective competence levels of the BSR-QF. The following section provides more detailed information on the methodology and descriptors that have been developed and used for the BSR-QF.

Competence level 1 – Basic education

Skills profiles to be reached at this stage are general basic training skills and they will not be counted to vocational training or academic education. Basic training is a prerequisite to gain access to higher qualification levels. The development of learning skills still requires resolute continued guided support. It is not possible to assign this skills level to a specific domain. Therefore, qualifications in this level are domain-independent.

Competence level 2 – No vocational training

Level 2 comprises the first level of vocational training (VET area). Qualifications at this stage are not specifically pronounced, since knowledge and skills are at an early stage of evolving. Methods and social skills are not yet domain-specific. 1 to 2-year qualification programmes, training phases and vocational training preparation phases are covered by this stage.

Competence level 3 – Lower vocational training

Level 3 covers complete vocational training from a training period of 2 to 4 years. Access to the competence level of a lower vocational training is possible after completion of a secondary school or after reaching the competence level 2. This involves professional skills, equivalent with an expertise level of an initial vocational training. The graduate has no or limited work experience. Qualifications at this level include a broad general education and an initial job specific expertise. Therefore, only specific parts of a domain will be covered in this qualification level. Completion of the skill level 3 is a precondition for achieving the competence levels 4 and 5.

Baltic Sea Region-Qualifications Framework

Level	Education Degree	Framework for Qualification of the VET* area and EHEA**
1	<i>Basic Education</i>	-
2	<i>No Vocational Graduation</i> graduation/training after/for 1-2 years, and work and apprenticeship preparation phase (at the age of 15/16)	First cycle VET area
3	<i>Lower Vocational Graduation</i> certificate of apprenticeship (in 2-4 years), and no/limited professional or experience (certificate of apprenticeship + <5 years of profession experience)	Second cycle VET area
4	<i>Middle Vocational Graduation</i> long profession experience as skilled worker (certificate of apprenticeship + ≥5 years of profession experience); comprehensive further education; “young master craftsman” with no/limited professional experiences (<3 years of profession experience)	Third cycle VET area
5	<i>Upper Vocational Graduation</i> master craftsman with long profession experiences as master (≥3 years); “master craftsman plus”; long profession experiences and further education (certificate of apprenticeship + ≥8 years of profession experience); introductory study period	Fourth cycle VET area and short cycle academic area
6	Bachelor (academic bachelor’s degree) and other similar qualifications and competences	Fifth cycle VET area and first cycle academic area

Level	Education Degree	Framework for Qualification of the VET* area and EHEA**
7	Master (academic master's degree) and other high qualifications and competences	Sixth cycle VET area and second cycle academic area
8	PhD and other very high qualifications and competences	Seventh cycle VET area and third cycle academic area

Competence level 4 – Intermediate vocational education

Compared to Level 3, this level specifies a higher degree of professional and technical expertise. Vocational training qualifications, extensive advanced training, “Young master craftsman”, and long work experience are covered by this stage. The level in this field is relatively high and all parts of a professional domain are covered. Level 4 qualifications indicate great job specific knowledge and skills. In this level, a person can be regarded as a specialist who has the knowledge and skills to relatively independently solve problems. Finally, achieving level 4 along with extensive advanced training, allows a limited number of candidates with ambitious and superb qualifications to access an academic bachelor level, without having previously obtained a general qualification for university entrance.

Competence level 5 – Higher vocational education

At this stage, candidates already have a formal vocational qualification as a master craftsman, including follow-up trainings; they have long professional experience and thus a high degree of technical expertise. Each part of a domain is covered at a high level, but without scientific expertise. Knowledge acquired by candidates at this competence level comprise autonomous learning, broad theoretical and practical knowledge. At this relatively high level of competence basic academic studies are touched upon. Completing of the competence level 5 with comprehensive, previous vocational education and further training (e.g. as “Mas-ter Craftsman Plus”) gives access to competence level 6, without having a general qualification for university entrance. It is possible to obtain credits for university entrance, based upon previously acquired knowledge (maximum 120 credit points). Nevertheless, persons who seek access to the bachelor level, have to pass an individual interview. Competence level 5 covers the short academic cycle with regard to the European Higher Education Area (EHEA). University students with circa 120 credit points are within competence level 5¹¹.

Competence level 6 – Bachelor and other comparable education and skills

¹¹ cf. Ministry for Science, Technology, and Innovation (Eds.) (2005): *A Framework for Qualifications in the European Higher Education Area*. Bologna Working Group on Qualifications Frameworks. Copenhagen.

Candidates within this qualification range have already completed the first cycle of the EHR and the 5th level of vocational training. The academic bachelor's degree is obtained by students who usually scored 180-240 credit points¹². Level 6 qualifications feature advanced theoretical knowledge and skills. This also applies to individuals with completed vocational training and notably domain-oriented knowledge. Precondition for access to the competence level 6 is the general qualification for university entrance or similar sophisticated competences and skills within a domain-specific education. Completing the qualification levels 4 and 5 also opens up access to the competence level 6.

Competence level 7 – Master and other higher qualification and skills

Having an outstanding domain-specific knowledge, candidates are at a significantly high level within this stage. They are highly qualified professionals, with advanced training and skills in a most deeply specific domain. Qualifications at this level include self-determined and theoretical learning. The master's degree is one of the conditions for reaching the third level of the academic cycle. Competence Level 7 is the second highest qualification of the EHR and the second highest level of the vocational training cycle.

Competence level 8 – PhD and other first-rate qualifications and skills

A PhD title is one of the highest academic degrees and it is the highest level within the EHR system. An academic person at this proficiency level is a professional and expert. Competence level 8 is the highest vocational training cycle to be reached by individuals. These persons have outstanding expertise and intellectual abilities in a most highly specific domain field. Persons at qualification level 8 have leadership skills and experience as well as potential for critical, methodical analyses, assessments and presentations.

4.3 Methodology and Descriptors

The proficiency levels measure professional, personal skills, abilities and competences within a specific domain. It is a method to classify and assess qualifications in levels. It is not the acquired diplomas but skills that are subject to assessment in levels. Qualifications are understood as a set of skills. A competence is defined as the ability to meet tough requirements in a specific context. Competent execution or effective actions involve the mobilization of expertise, cognitive and practical skills as well as social and behavioural components such as attitudes, emotions, values and motivations¹³. Skills are more than school and work related knowledge. It is therefore a consistent argument that (professional) skills comprehensively include social and personal competence. Skills, as they are set out in the BSR-QF, are not occupation-specific, but they are in fact aggregates¹⁴.

¹² Ministry for Science, Technology, and Innovation (Eds.) (2005): *A Framework for Qualifications in the European Higher Education Area*. Bologna Working Group on Qualifications Frameworks. Copenhagen

¹³ D. S. RYCHEN/L. H. SALGANIK (2003): *Key Competencies for a Successful Life and a Well-Functioning Society*. DeSeCo Project report Summary, OECD, Paris, p. 2

¹⁴ cf. BUNDESINSTITUT FÜR BERUFSBILDUNG (BIBB) (Eds.) (2005): *Fachlicher Prüfbericht zu den Grundbegriffen und Deskriptoren des Entwurfs für einen Europäischen Qualifikationsrahmen*. Bonn; and Hanf, Georg und Volker Rein (2005): *Towards a National Qualification Framework for Germany*. Federal Institute for Vocational Education and Training (BIBB), Bonn.

Hence, educational degrees were used in the project to describe, illustrate and classify skills. This increases the legitimacy among stakeholders, builds on familiar ways of thinking and classification patterns and enables easy, transparent and unbureaucratic description and understanding.

Table below shows the descriptors for each skills level of the BSR-QF. The descriptors “expertise” and “competence” are equivalent to the descriptors in the EQF.

The Baltic Sea Region Qualifications Framework contributes to the discussion and advisory debate on the development of the National Qualifications Framework. The design is consistent with the structures and methods of the European Commission¹⁵. This BSR-QF contributes to the fostering of education and the economy of the Baltic States as it presents an instrument to reduce cross-border barriers, which limit the work-related mobility and productivity dependent there-on. Accordingly, the BSR-QF has been accepted by the members of the Hanseatic Parliament in the General Assembly on 8 November 2007 in Vilnius as a substantial support and development tool. In the further work of the present project, the BSR-QF ensures orientation for grading, structuring and evaluation of individual professions.

Level	Expertise*	(Methodological) Competence*	(Formal) education degree	Framework for Qualification of the VET area and EHEA
	<i>In the BSR-QF, expertise is described as knowledge and skills (equivalent with EQF)</i>	<i>In the BSR-QF, competence describes the degree of responsibility and autonomy</i>	<i>The (Formal) education degree describes the degree which can be reached by an individual</i>	<i>The framework VET area and EHEA is a modified and extended EHEA framework</i>
1	Basic general Education; basic skills required to carry out simple tasks	Work under direct supervision in a structured context	–	–

¹⁵ cf. EUROPÄISCHE KOMMISSION (EC) (2005): *Towards a European Qualifications Framework for Lifelong Learning*. Commission Staff Working Document, SEC (2005) 957, Brussels; EUROPEAN COMMISSION (EC) (2006): *Implementing the Community Lisbon Programme. Proposal for a recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning*. COM (2006) 479 final, 2006/0163 (COD), Brussels; and Ministry of Science, Technology and Innovation (Eds.) (2005): *A Framework for Qualifications in the European Higher Education Area*. Bologna Working Group on Qualifications Frameworks, Copenhagen.

2	Basic factual knowledge of a field of work or study; basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	Work under direct supervision in a structured context with some autonomy	graduation/training after/for 1-2 years, and work and apprenticeship preparation phase (at the age of 15/16)	First cycle VET area
3	Knowledge of facts, principles, processes and general concepts, in a domain; a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Take responsibility for completion of tasks in work; adapt own behaviour to circumstances in solving problems	Certificate of apprenticeship (in 2 - 4 years), and no/limited professional or experience (certificate of apprenticeship + < 5 years of profession experience)	Second cycle VET area
4	Factual and theoretical knowledge in broad contexts within a domain; a range of cognitive and practical skills required to generate solution to specific problems in a domain	Exercise self-management within the guidelines of work 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 activities	Long profession experience as skilled worker (certificate of apprenticeship + \geq 5 years of profession experience); comprehensive further education; "young master craftsman" with no/limited professional experiences (< 3 years of profession experience)	Third cycle VET area

5	Comprehensive, specialised, factual and theoretical knowledge within a domain and an awareness of the boundaries of that knowledge; a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities with unpredictable change; review and develop performance of self and others	Master craftsman with long profession experiences as master (≥ 3 years); "master craftsman plus"; long profession experiences and further education (certificate of apprenticeship + ≥ 8 years of profession experience); introductory study period	Fourth cycle VET area and short cycle academic area
6	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles; advanced skills, demonstrating mastery and innovation required to solve complex and unpredictable problems in a specialised domain	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	Bachelor (academic bachelor's degree) and other similar qualifications and competences	Fifth cycle VET area and first cycle academic area
7	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking; critical awareness of knowledge issues in a field and at the interface between different fields; specialised problem-solving	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	Master (academic master's degree) and other high qualifications and competences	Sixth cycle VET area and second cycle academic area

	skills required in re- search and or innova- tion in order to de- velop new knowledge and procedures and to integrate knowledge from dif- ferent fields	reviewing the stra- tegic performance of teams		
8	Knowledge at the most advanced fron- tier of a field of work or study and at the in- terface between do- mains; the most ad- vanced and special- ised skills and tech- niques, including syn- thesis and evaluation, required to solve criti- cal problems in re- search and or innova- tion and to extend and redefine existing knowledge or profes- sional practice	demonstrate sub- stantial authority, innovation, auton- omy, scholarly and professional integ- rity and sustained commitment to the development of new ideas or pro- cesses at the fore- front of work or study contexts in- cluding research.	PhD and other very high qualifica- tions and compe- tences	Seventh cy- cle VET area and third cycle academic area

* European Commission (EC) (2006): Implementing the Community Lisbon Programme. Proposal for a recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning. COM (2006) 479 final, 2006/0163 (COD), Brussels.

4.4 Structuring and evaluation

The objective of the Baltic Education Project was to develop, introduce and implement a system for mutual recognition of professional qualifications. This will be achieved by using the European Credit Transfer System of Vocational Education and Training (ECVET)¹⁶. ECVET is a system that enables describing qualifications by transferable and accumulable learning units (in the form of knowledge, skills and competence) and corresponding allocated credit units¹⁷.

¹⁶ EUROPEAN COMMISSION (EC) (2006): European Credit System for Vocational Education and Training (ECVET). A system for the transfer, accumulation and recognition of learning outcomes in Europe. SEC (2006) 1431, Brussels, p. 3

¹⁷ EUROPEAN COMMISSION (EC) (2006): European Credit System for Vocational Education and Training (ECVET). A system for the transfer, accumulation and recognition of learning outcomes in Europe. SEC (2006) 1431, Brussels, p. 3

ECVET also perfectly complements the European Qualifications Framework¹⁸. In its guidelines, the European Commission outlined the overall concept as follows:

- a) focus on learning outcomes expressed in terms of knowledge, skills and competence;
- b) based on a process of qualification;
- c) adapted to the demands of lifelong learning and all learning contexts, on an equal footing;
- d) geared towards the mobility of people¹⁹.

Further ECVET consultation guidelines and regulations specify:

- a) mobility of people undertaking training;
- b) validation of the outcomes of lifelong learning;
- c) transparency of qualifications;
- d) mutual trust and cooperation between vocational training and education providers in Europe²⁰.

The experience and methods of ECVET in the project “Baltic Education”, form the basis for the evaluation of the “Master training-program”.

The Master training was structured in four parts:

Part A1 occupation-related practical training

Part A2 occupation-specific theory

Part B1 Business administration, law and management

Part B2 Profession and working-educational knowledge

The four parts are subdivided into the following modules:

Parts A1 and A2

- Modul A1/A2-1 physical bases and technical mathematics
- Modul A1/A2-2 planning bases for building system technology
- Modul A1/A2-3 planning and construction of distribution, measurement and control technology

¹⁸cf. EUROPEAN COMMISSION (EC) (2006): Implementing the Community Lisbon Programme. Proposal for a recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning. COM (2006) 479 final, 2006/0163 (COD), Brussels.

¹⁹EUROPEAN COMMISSION (EC) (2006): European Credit System for Vocational Education and Training (ECVET). A system for the transfer, accumulation and recognition of learning outcomes in Europe. SEC (2006) 1431, Brussels, p. 5

²⁰ EUROPEAN COMMISSION (EC) (2006): European Credit System for Vocational Education and Training (ECVET). A system for the transfer, accumulation and recognition of learning outcomes in Europe. SEC (2006) 1431, Brussels, p. 35

- Modul A1/A2-4 planning and construction of electric machines and communication systems
- Modul A1/A2-5 electronic components and infrastructure systems
- Modul A1/A2-6 legal frameworks
- Modul A1/A2-7 management of electrotechnical projects
- Modul A1/A2-8 electric machines, protection of electrotechnical plants, renewable energy
- Modul A1/A2-9 planning of building automation systems

Part B1

- Modul B1/1: Action field „Determining corporate competitiveness“
- Modul B1/2: Action field „Preparing, completing and evaluating start-up and take-over activities“
- Modul B1/3: Action field „Developing corporate government strategies“
- Modul B1/4: Action field „Basic computer skills, bookkeeping using commercial software“

Part B2

- Modul B2/1: Action field „Review of training requirements and training planning“
- Modul B2/2: Action field “Training preparation and assisting in recruiting prospective trainees”
- Modul B2/3: Action field “Conducting trainings”
- Modul B2/4: Action field “Completion of training”

All seventeen modules are classified as mandatory modules, in which knowledge and skills have to be acquired.

With regard to the assignment of the Master training in the BSR-QF, following classification was made: Minimum competence level 5 “Higher Vocational Education”.

In the evaluation of the entire Master training maximum 180 credit points are possible.

Evaluation by credit points system

<u>Module</u>	<u>Credit</u>	<u>Points</u>
Modul A1/A2-1 physical bases and technical mathematics	10	
Modul A1/A2-2 planning bases for building system technology	12	
Modul A1/A2-3 planning and construction of distribution, measurement and control technology	22	
Modul A1/A2-4 planning and construction of electric machines and communication systems	16	
Modul A1/A2-5 electronic components and infrastructure systems	14	

Modul A1/A2-6 legal frameworks	14	
Modul A1/A2-7 management of electrotechnical projects	10	
Modul A1/A2-8 electric machines, protection of electrotechnical plants, renewable energy	17	
Modul A1/A2-9 planning of building automation systems	15	
Total Parts A1 and A2		130
Modul B1/1: Action field „Determining corporate competitiveness	9	
Modul B1/2: Action field „Preparing, completing and evaluating start-up and take-over activities“	9	
Modul B1/3: Action field „Developing corporate government strategies“	10	
Modul B1/4: Action field „Basic computer skills, bookkeeping using commercial software“	7	
Total Part B1		35
Modul B2/1: Action field „Review of training requirements and training planning“	3	
Modul B2/2: Action field “Training preparation and assisting in recruiting prospective trainees”	3	
Modul B2/3: Action field “Conducting trainings”	7	
Modul B2/4: Action field “Completion of training”	2	
Total Part B2		15
Total	1.80	1.80

4. 5 Final examination and international mutual recognition

After completion of practical testing of the Master training by the project partners in Denmark, Germany, Latvia, Lithuania and Poland, examination regulations were designed and approved, leading to an officially Master degree of vocational education training (see Chapter 3). In this way, future realization of the course can be completed by an appropriate final exam.

The following procedure was adopted for future application in the involved Baltic Sea Region countries.

Final exam

The project objectives cover development and implementation of a unified master training and unified examination regulations across the Baltic Sea Region. In each Baltic Sea Region's country, there are already official examination regulations in place (e.g. in Germany, Poland and Latvia) which cannot be abolished or changed within the framework of the project. To master these challenges during the duration of the project the following ways of solution are pursued.

- For the four parts of the master training unified examination regulations were developed. They include previously identified groups in the Qualifications Framework, evaluations according to the "European Credit system for Vocational Education and Training" (ECVET) and separate completion of all four parts of the master training.
- In countries with existing mandatory examination regulations, the examination is conducted according to the national law, leading to a "national master" title accordingly. Further, and if possible, additional evaluation shall be carried out in these countries, based on designed unified examinations regulations.
- In countries without existing examination regulations, examinations are conducted based on developed unified examination regulations.
- Examinations or developed evaluations based on developed unified examination regulations lead to the "Master Baltic Sea Region".
- In the medium run (about four to six years), unified examination regulations shall be implemented, if possible, in all countries of the Baltic Sea Region.

International recognition

- a) Lecturers/examiner rates the courses by assigning credit points.
- b) Mutual recognition of completion in these countries follows upon fulfilment of the following conditions:
 - The four exams were passed.
 - The evaluation of the course has yielded at least 144 credit points out of total 180 possible credit points (20% tolerance margin).
 - Skills were acquired in all twelve mandatory modules

Documentation

Where they do not yet exist, each of the future participants will receive an EU education passport in which the results are documented.

4.6 Application of the examination regulation in the countries of implementation of the project

In Denmark, the independent training parts B1 "Business administration, law and management" and B2 "Profession and working-educational knowledge" were implemented during

the project period. Following the test phase and evaluation, part B2 was particularly demanded and in the meantime, it has been carried out four times by various educational institutions with a total of 92 participants.

The vocational training courses corresponds to level 4 in the Danish qualification framework, and the participants must reach specific goals/levels, and show more than 80 % attendance, to get their certificate.

Because of negotiations in October 2017 between the Danish Government, Danish Employers' Association, the Confederation of Danish Industry and the Unions, which organize the employees, it has been agreed to strengthen the Labour market education system by introducing recognized tests at the end of each education module. The agreement (tripartite agreement) will be implemented from the beginning of 2018. Because of that, based on the above examination regulations, vocational training institutions can give the Master certificate at the level 4.

In Latvia, the independent training parts B1 "Business administration, law and management" and B2 "Profession and working-educational knowledge" were implemented during the project period. The examination of crafts masters in Latvia takes place according to the law "About craftsmanship" (1993). Although this exam is based on a much lower level, the advanced training developed in the project must be abolished in accordance with the current Latvian Examination Regulations. A change in Latvia can only be achieved through the following means:

- a) Compared to the existing training and examination regulations, the master training courses and examinations developed in the project are a complete reorganization.
- b) The curricula and examination regulations of the project must be assessed by at least one of the 16 existing Sector Advisory Councils. In the case of a positive opinion, the Sectoral Advisory Council shall apply to the National Ministry of Education for state recognition of training or further education.
- c) The curricula and the examination regulations, developed in the project, must be assessed by at least one of the 16 existing Sector Advisory Councils. In the case of a positive opinion, the Sectoral Advisory Council shall apply to the National Ministry of Education for state recognition of training or further education.
- d) Only the Ministry of Education can decide on the state recognition of examinations and further education qualifications. The Cabinet of Ministers has expressly confirmed the development of advanced training occupations with recognized continuing education qualifications.
- e) Educational institutions that carry out further education courses with a state-recognized degree must be accredited. The accreditation is also a prerequisite for state funding of further education measures.

As the partners from Latvia establishes Master school in the project that starts operating in 2018, such a procedure could not yet be initiated during the project's lifetime. After the start of operations and accreditation of the new master school, the Latvian partner will start negotiations with the industry advisory councils.

In Lithuania, all four parts of the master's project were implemented during the project. As a completely new training for Lithuania, the initial implementation took place as part of a non-formal VET program. Based on the above described examination regulations, the exams of all four parts were accepted by the educational institution with the participation of social partners. The VET certificates (diplomas) are awarded by the state and by the employers. The first implementations and acceptance of the tests run until the end of the project. If their evaluations lead to a positive result, the Lithuanian partner will apply to the National Ministry of Education to transfer the master craftsman education and examination regulations to the formal VET program, as only formal VET programs can receive state funding.

In Poland, all four parts of the master craftsman training were implemented during the project. The examinations will be carried out by the relevant Chamber of Handicrafts based on the national law (Law on the promotion of the craft of 1989 and Regulation of the Minister of Education of 2012). To achieve a recognized degree at a significantly higher level of qualification, the following path is taken:

- a) The first implementations and acceptance of the tests run to the end of the project. If their evaluations lead to a positive result, the Polish partner and the respective Chamber of Crafts will start negotiating with the Polish Federation of Crafts.
- b) Only the National Ministry of Education can decide on the new examination regulations of the project with recognized degree. For this purpose, the Central Association of Polish Crafts must submit a request to the National Ministry of Education based on the curriculum, the examination regulations and the evaluation results.
- c) If this is the case, then the Ministry of Education (without Parliament's involvement) issues a new examination regulation with a state-recognized degree.