

# PRODUCT 05

## BLUEPRINTS FOR THE IMPLEMENTATION OF DUAL BACHELOR COURSES BY THREE- TIER INDUSTRY- SPECIFIC COMPETENCE CENTRES

### Partner

Baltic Sea Academy, Germany (Lead Partner)

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German

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## Summary of the Project

SMEs represent 99% of all entrepreneurs, provide approximately 70% of all jobs and create around 80% of all new jobs. The further development of SMEs is severely limited by a large, growing shortage of entrepreneurs, managers and skilled workforce. By 2030, the number of younger workers will decrease by as much as 25% in most member states. In addition to the quantitative problems, there are increasingly qualitative bottlenecks due to increasing, dynamically changing qualification requirements.

In Germany, the dual vocational training proved itself to be of high value. In the participating countries Poland, Lithuania, Latvia and Estonia, vocational training takes mostly place with complementary internships in companies. The participation in vocational training is very low, the qualifications achieved are insufficient and the unemployment rate is very high. Particularly in these countries with a predominantly school-based vocational training, the relevant skills and competencies must be significantly improved, and high-quality quality must be achieved. According to a survey 96% of companies in Lithuania demand better practical and 74% better theoretical skills and abilities.

In all the countries participating project countries, the participation in further training as well as the skills and competences conveyed therewith must strongly improve. According to EU's objectives, at least 15% of adults should participate in lifelong learning each year. This ratio was significantly exceeded by up to 29% in Scandinavian countries in 2016, compared with only 3.7% (PL) to 8.4% (DE) in the project countries.

While there are solid vocational and inter-company training capacities in Germany, there is inadequate capacity in vocational education and training in the other participating countries. Vocational schools and companies have no or little experience with dual vocational training, as well as with inter-company training or work-based learning.

Against this backdrop, the project pursues the ambitious objectives of further developing future vocational training systems, improving qualifications, enhancing the attractiveness of vocational education and training, and reducing the growing deficits of qualified skilled workers.

The project is carried out by seven partners from Germany, Poland, Lithuania, Latvia and Estonia. The internationally active Lead Partner is particularly experienced in the training and support of SMEs as well as in the implementation of complex educational projects. Partners are three experienced vocational training centres and three chambers, which are responsible for vocational training and operate own inter-company training centres.

The project is structured by seven work packages with the following main activities:

1. Project management and implementation of six workshops and two international multiple Events.
2. Development, establishment and operation of an industry-specific competence centre with the realization of a dual vocational training in a country with previously school education and preparation for implementations in two other countries.



## Establishment of two-stage industry competence centers of vocational education and training

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3. Development and implementation of further training for vocational school teachers, for the implementation of dual training as well as training of instructors for a technician training.
4. Adaptation and implementation of training for trainers in SMEs in countries with mainly vocational training to create supervisors for the training on the spot.
5. Development and implementation of a further training as a technician within the framework of a dual training of two years with the possibility to allow for a following study course at vocational colleges/polytechnics.
6. Development and coordination of concepts for the realization of dual bachelor courses, combining a dual vocational training with a Bologna-compliant study course, as well as realization plans for the expansion of the two-stage industry-specific competence centres into a three-level system of vocational education (training, further education, study).
7. Transfer of the project results to 68 chambers and universities from 13 countries, which are involved as associated project partners in the project implementation and receive sustainable implementation advice, as well as implementation of further dissemination activities.



# Concept for the development of a third level of competence center

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2. Preparation of a third level industry competence centre
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Annex I Dualer Studiengang Management Erneuerbarer Gebäudeenergietechnik (Bachelor of Engineering)

Annex II Dualer Bachelor-Studiengang Betriebswirtschaft KMU

## 1. Background: Development of three-level competence center

Poland and the Baltic countries have an extremely high need for further training. In this region there is a great shortage of personnel, spatial and technical capacities. In the interest of vocational schools and their teaching staff themselves, but also in the interest of economic development, securing existing and creating new jobs, strengthening innovation potential and productivity and reducing high unemployment, existing vocational schools should be developed and expanded into comprehensive centers of competence.

Small and medium-sized enterprises suffer from bottlenecks in operational management and information processing. They need tailor-made services - without delay and from a single source. Networks are of outstanding importance to them. Unlike large companies, they cannot have internal staff functions that perform a wide range of corporate management tasks. In the SME sector, such staff functions and support tasks must be performed externally. The competence centers are the central service providers who, through cooperation between vocational schools, chambers and universities, provide SMEs with the necessary reliable support tailored to the company and from a single source, thus offering non-cash benefits.

Central bottlenecks for further development of small and medium-sized enterprises in all Baltic Sea countries concern the rapidly growing shortage of young entrepreneurs, managers and skilled workers, the great need for product and process innovations as well as the lack of innovation promotion tailored to the specific needs of SMEs. In order to remove these barriers to growth, existing vocational schools in Poland should be expanded into three-level competence centers.

1. Level: Dual professional training
2. Level: Further training including training as a technician and master craftsman

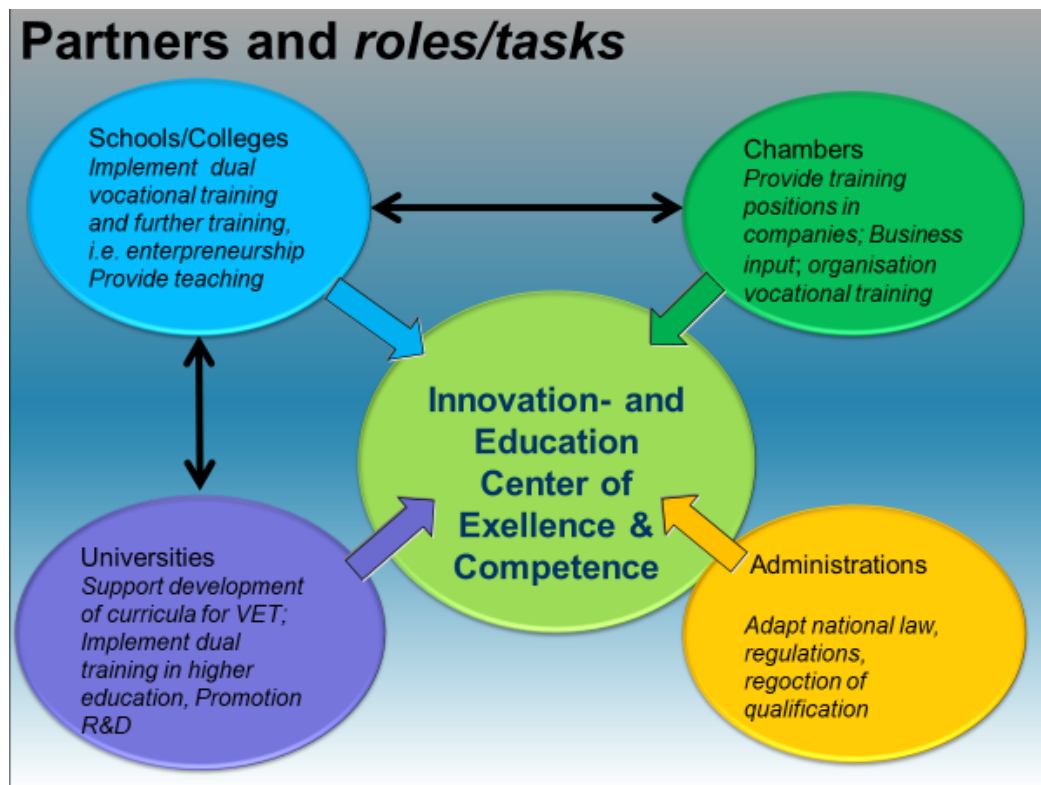
### 3. Level: Dual Bachelor studies and promotion of innovations

Education represents the biggest bottleneck and the strongest growth area of the future. Qualified specialists are the most important prerequisite for taking advantage of the market opportunities. For example, a survey carried out by Hanse-Parlament led to the following results:

- In 10 years 40% of SMEs will need company’s successor
- 70% of SMEs need additional skilled workers
- 100% of SMEs cannot recruit the specialists they need or can do it with difficulty
- In the medium term 78% of SMEs need new or additional executive staff
- 96% of SMEs would like to see better practical, and 74% better theoretical vocational education

The innovative strength of SMEs is most strongly limited by the availability and qualification of entrepreneurs, managers and specialists. Due to the lack of qualifications and shortage of entrepreneurs and employees, innovations in SMEs are already much lower than they actually could and should be. At the same time, qualification requirements are becoming higher; alongside specialized knowledge, personal and social skills are gaining equal importance. However, the so-called soft skills require a great deal of catching up and development. Improving qualifications and eliminating the shortage of skilled workers is the most important task and the central key to sustainable strengthening of innovation capacity, competitiveness and growth of SMEs. The most important tasks of the competence centers in this respect include in particular:

- Improving the quality and attractiveness of vocational education and introduction of dual education system.
- Career guidance and integration of young people with learning difficulties and social disadvantages.
- Integration of all young people and creation of specific training courses for school leavers with practical talents.
- Carrying out courses for strong learners with the provision of additional qualifications in innovation-oriented topics.
- Strong intensification of vocational further training.
- Qualification of managers and entrepreneurs, in particular through training as master craftsmen or technicians.
- Strengthening innovation capacity through comprehensive promotion of increased employment for women and older people and entrepreneurship for women.
- Carrying out dual Bachelor's degree programs in which studies are combined with parallel relevant vocational education in order to meet the high demand for innovative entrepreneurs and managers for SMEs.



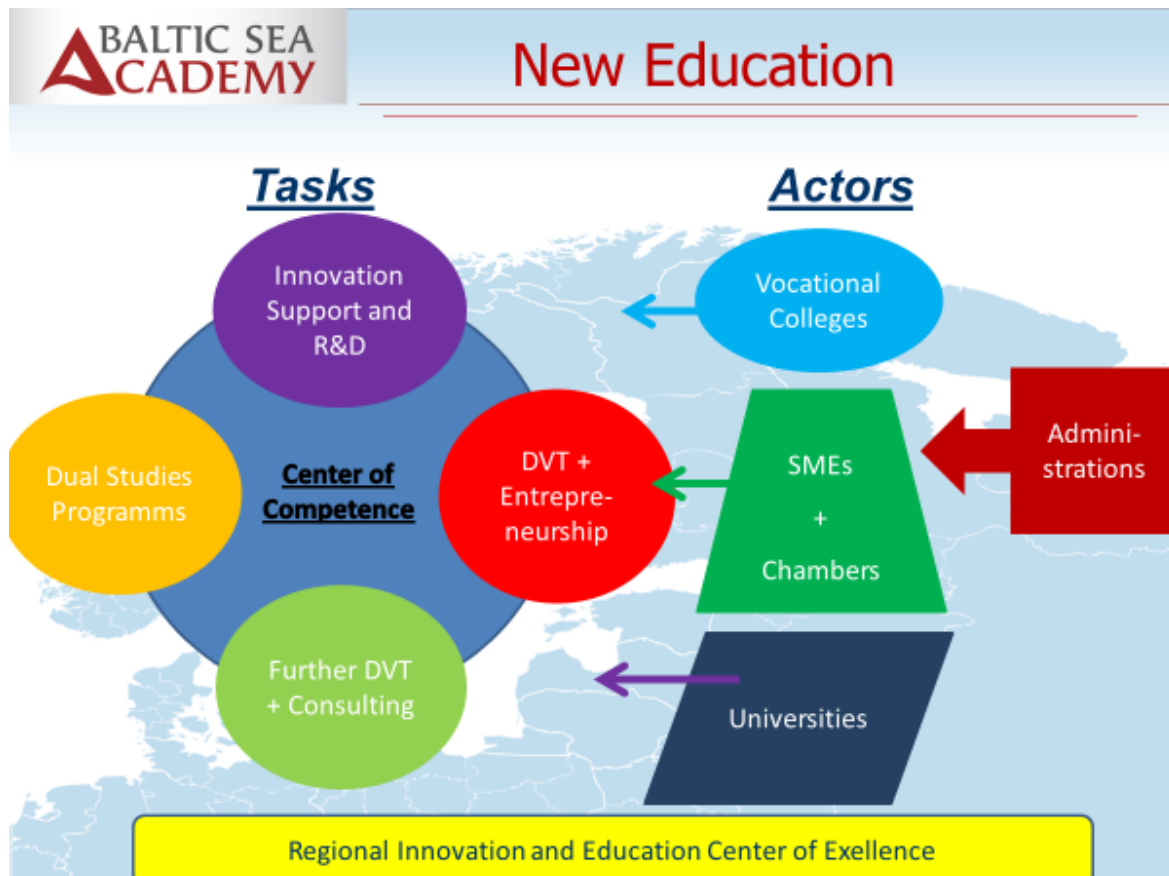
In a region, the centers of competence must cover all areas and topics relevant for SMEs on the basis of job-sharing. These centers of competence with the status of vocational academies, which each concentrate on specific occupations and technology areas, should be operated in close cooperation with economic chambers and associations as well as with universities in order to jointly carry out educational and counselling tasks, such as:

#### In level 1 Vocational education

- Comprehensive career counselling for young people and their parents.
- Providing regular vocational school classes within the framework of dual vocational education.
- Extensive qualification, support and counselling tasks for young people with learning difficulties or social disadvantages who until now have been pushed away and who get integrated into regular vocational education via these channels.
- Development and implementation of special staged vocational education courses for people with learning difficulties in cooperation with companies
- Development and implementation of vocational education courses for strong learners who receive additional qualifications and early further trainings in the competence center with a scope of 500 - 700 hours already during the vocational education.

## In level 2 Further training

- Training the trainers in companies and accepting the trainer aptitude examination in order to enable companies to provide vocational education within the framework of dual systems.
- For persons with completed vocational education, training to become a technician or master craftsman while at the same time obtaining a qualification enabling one to attend university.
- Execution of business start-up courses and accompanying consultation by business founders up to the establishment or takeover of a business.
- Demand-oriented development and realization of further training programmes covering all relevant aspects of the strongly growing need for further training of entrepreneurs, managers and skilled workers.
- Targeted further training for women and men during the family phase as well as qualification and counselling tasks during the re-entry into the working life.
- Conducting further training and counselling programmes for older people
- Carrying out retraining, qualification and integration measures for the unemployed together with employment services.

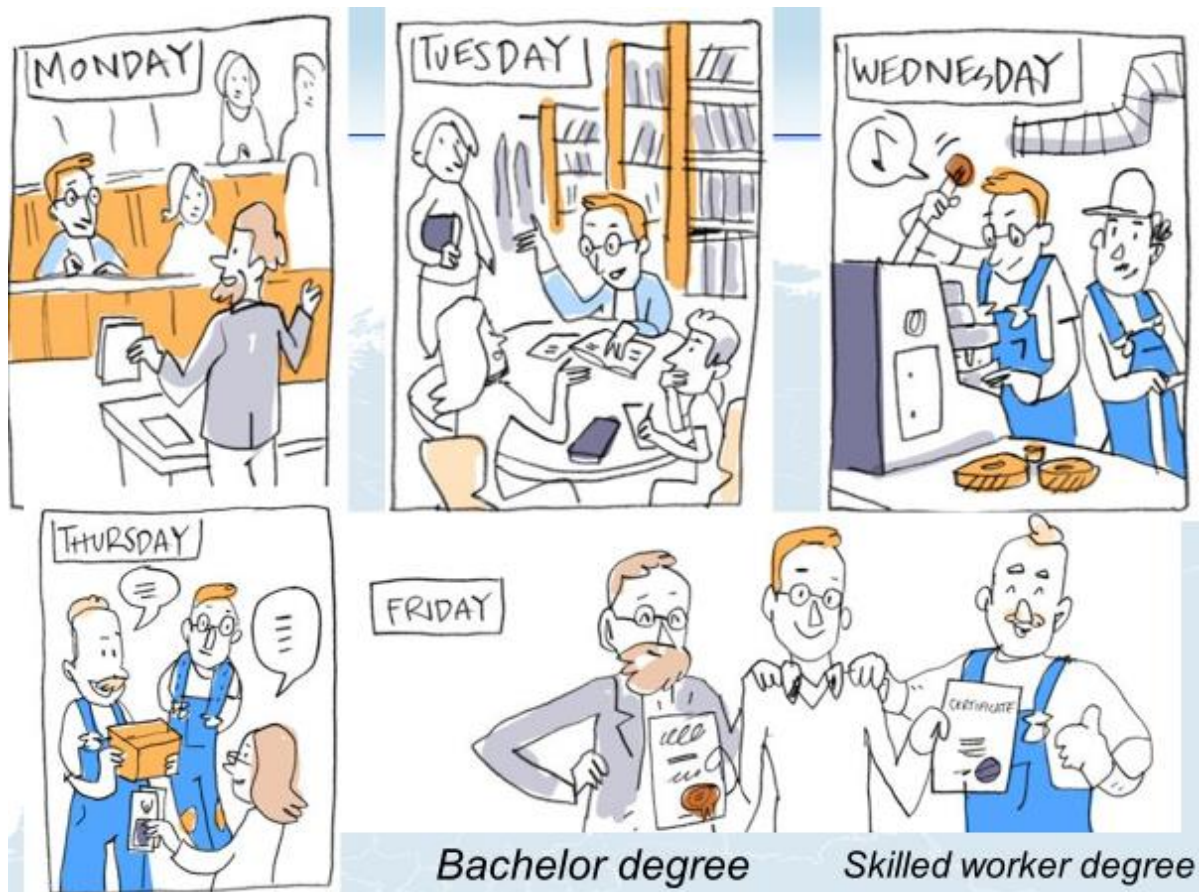


### In level 3 University education and promotion of innovations

- Together with colleges, universities as well as with companies, realization of dual study programs in which the competence centers take on the demanding school-based part of vocational education.
- Ensuring the exchange of information and experience as well as the transfer of knowledge and technology in writing and electronically, and in particular through the personal exchange which is so important for SMEs, in the form of meetings, information and training courses, group coaching, etc.
- Comprehensive promotion of innovations for SMEs as well as implementation of R&D tasks in and with SMEs.

Within the framework of dual study programmes, the training locations "college/university" and "company" must cooperate intensively with each other. This is also an excellent foundation for the mutual exchange of knowledge and for the promotion of innovations of SMEs.

About 40% of the courses offered at the college/university are run by practitioners, ensuring that there is constant exchange of experience and that entrepreneurial thinking is carried into the colleges/universities.







The participants of dual Bachelor courses are at the same time apprentices/employees in companies. The topics for Bachelor and seminar papers that the student must complete in order to obtain his or her degree are determined by the companies in consultation with the full-time professors/lecturers and dealt with within the company. In this way, tailored development work and knowledge transfer for the companies are realized by the students in cooperation with professors, lecturers and other teaching staff directly in the company.

On the basis of this intensive cooperation, it is much easier to jointly identify R&D tasks of SMEs, to design concepts and grant applications and to carry out tailored R&D projects in and with SMEs.

In carrying out the comprehensive tasks, the personnel, technical and spatial capacities of former vocational schools, colleges/universities and chambers of commerce are used on the basis of job-sharing. Nevertheless, for development as centers of competence the existing vocational schools must be excellently equipped, both spatially and technically, with training workshops, demonstration facilities etc. The spatial and technical capacities are used simultaneously for all tasks of the competence centers, for example modern technologies in the training workshops during the day for vocational education and in the afternoons, evenings and weekends for further vocational education and technology transfer.

This achieves high capacity utilization and profitability and ensures mutual benefits and strengthening effects in the performance of various tasks.

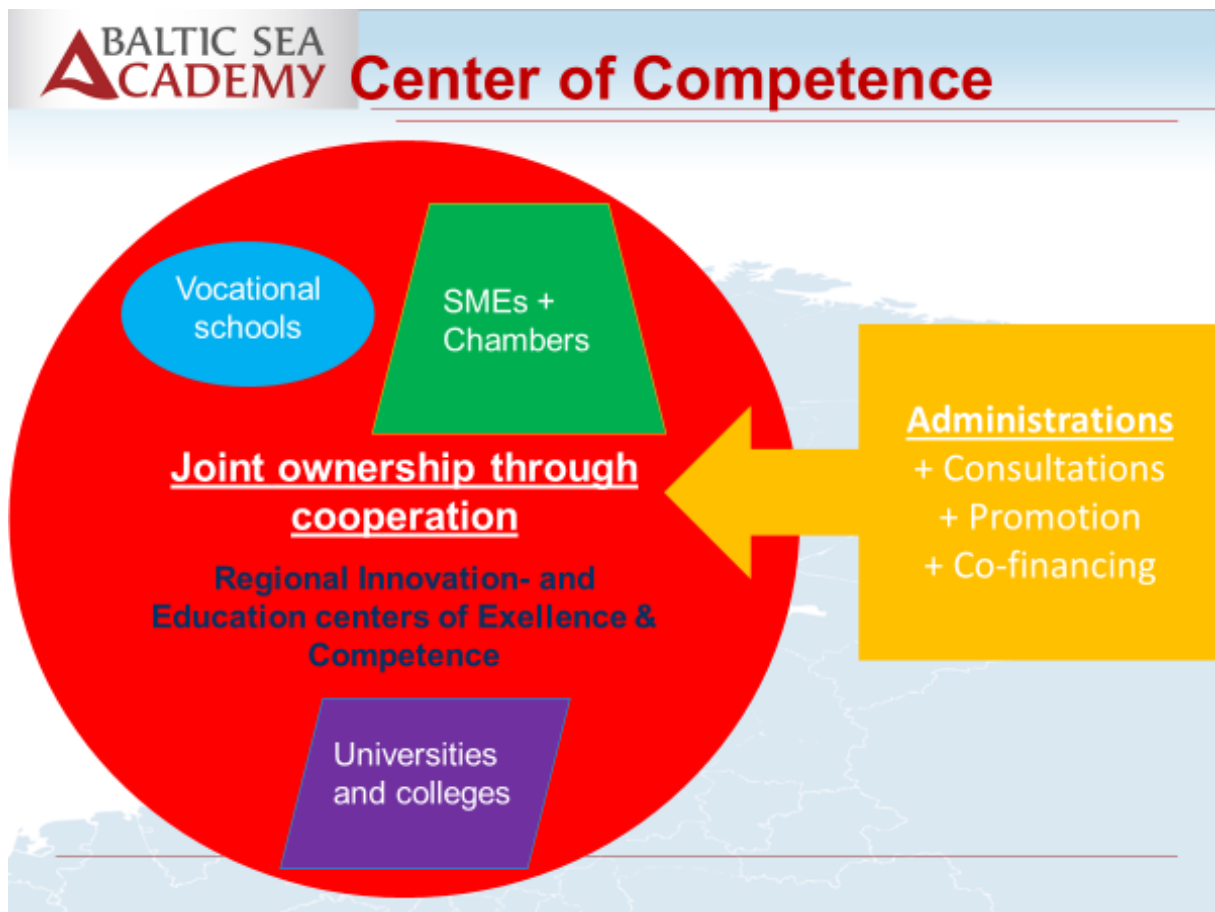
At the same time, comprehensive, lasting further training of the teachers is necessary in order to be able to competently perform these extensive, demanding tasks.

This development of vocational schools into centers of competence for small and medium-sized enterprises represents very large and growing fields of activity for all teachers at vocational schools. Of course, such a development requires high public investments, which, however, are offset by considerable savings in vocational education through the implementation of dual education systems. Additionally, it will achieve effective promotion of education, innovation and business, which will pay off in several ways through higher growth with rising tax revenues on the one hand and savings of public funds in labor market and social policy on the other.

It needs to be noted that the centers of competence do not constitute an employment program for vocational school teachers. On the contrary, there is no alternative for shaping a prosperous future. And it is much more appropriate and economical to use the facilities of the existing vocational schools for this purpose than to create much costlier new facilities from scratch. In this respect, the personnel, spatial and technical capacities of the vocational schools that become available under status quo conditions are a unique opportunity that must be used actively in the interest of all.

In order to achieve unrestrictedly recognized Bachelor degrees, the three-level competence centers must receive the state-recognized status of "Berufsakademie" or "College" with the right to carry out practice-oriented study courses. They must be operated

with the financing from public funds in close cooperation with former vocational schools, chambers, colleges and universities. In order to be able to implement these far-reaching developments, vocational schools must be moved out of the state structures and transformed into independent legal forms, for example as public enterprises, non-profit limited liability companies or foundations. The operation should be run by the equal partners including chambers of commerce, industry and Crafts, vocational schools and colleges/universities. If this is not possible in exceptional cases, chambers of commerce and colleges/universities must be involved in the management with a decisive role.



## 2. Preparation of a third level industry competence centre

The Polish reform programme provides "only" for the development of two-level industry competence centres. According to the analysis results and recommendations, a third level "Higher education and innovation promotion" is urgently needed for SMEs in the Baltic Sea Region countries. The precondition for this is that former vocational schools, chambers of commerce and colleges/universities cooperate in the competence centres. However, this cooperation should not only begin in the 3rd level, but from the 1st level onwards. The joint work of the three partners from the very beginning strongly facilitates the implementation of the tasks of the 1st and 2nd levels and prepares intensively for the cooperation in the 3rd level.

A dual bachelor study programme is composed of the following basic elements:

- Admission requirement: higher education entrance qualifications (i.e. A-levels) or advanced technical college certificate.
- Duration: 3 to 4 years maximum (depending on subject).
- About 50% of the educational period as practical training or professional activity in a company. Vocational education takes place in dual form in companies and vocational schools.
- About 50% of the educational period takes place at the university.
- Both parts of the training are coordinated with each other and are carried out in parallel. Theory can be taught in longer blocks (e.g. 3 months) or 3 days a week with shorter additional blocks.
- About 60% of the courses offered at the university are taught by full-time professors and lecturers and about 40% by practitioners from companies.
- The participants sign a contract for vocational education/activity with the company and a contract for study with the university.
- Degree: Journeyman/skilled worker and Bachelor.

The bachelor's degree also entitles the holder to follow a master's programme at a university at a later date. However, the aim is that at least 80 % of the bachelor's degree holders should remain in the small and medium-sized business sector as entrepreneurs and managers and, building on their initial bachelor's degree, improve their skills within the context of ongoing continuing education.

All courses must fully comply with the objectives and requirements of the Bologna Process, to which more than 40 countries have now joined.

The study programs are modularized. Credit points are awarded both for the study modules and for practical training.

The study programs are examined and certified by recognised accreditation institutions. To promote cross-border cooperation between study locations and the exchange of teachers and students, the study programs should be standardized in the Baltic Sea

Region. This is also intended to support international cooperation between companies involved in vocational education.



The excellent qualifications acquired in the dual study programs are also decisive prerequisites for high innovations. In addition, the participating universities/colleges should also take part in practice-oriented research and development projects for medium-sized companies and thus promote innovations in the long-term. The study programmes and innovation promotion are aimed at the identical target group, namely high-performing, medium-sized companies and their management personnel. As companies are always included in the dual study programmes, there is direct cooperation between companies and universities, which can be used for knowledge and know-how transfer as well as for research and development work by companies. Research and development tasks can be carried out in various ways, for example

- Work as part of semester or bachelor theses of the participants/students
- Targeted individual assignments of the companies or consulting/know-how transfer by professors and teachers
- More complex projects with public funding (especially from the EU)
- Joint work on projects with several companies in one industry (industry association projects)



In any case, it makes sense to train entrepreneurs, managers, and specialists within the framework of dual bachelor's degree programs

- in industry competence centres;
- to link it directly with the advancement of vocational and continuing education, and the promotion of innovations;
- to gain synergy effects and achieve cost reductions, and
- to provide small and medium-sized enterprises with all necessary services and assistance from a single source, tailored to the specific needs of the sector.

### 3. Country-specific orientation and preparation of implementations

For a country-specific orientation of three-tier competence centers, the following aspects in particular must be taken into account:

Legal conditions for carrying out initial and continuing vocational training

- The legal conditions are in place in all countries involved in the project. It goes without saying that state vocational schools require the approval of their supervisory authorities.
- Most of the existing vocational schools have a sector orientation, so that the development into sector comet centers is not difficult.
- In Germany and Poland, dual vocational training is already being implemented.
- In Lithuania and Latvia, dual vocational training can easily be implemented as pilot projects
- Where dual vocational training is not permitted in a country, school-based training must be provided (temporarily).

Legal conditions for the implementation of dual Bachelor's degree programs

- There are clear rules in Germany and Poland.
- In Lithuania, dual study programs can easily be realized with the approval of the ministry.
- In Latvia and Estonia, the legal requirements must be examined.
- If it is not possible to combine vocational training with study courses in one country, students can combine study with work in companies.
- In case of missing or difficult legal regulations for dual study programs, cooperation with a foreign university is recommended (at least for a transitional period), so that accreditation, acceptance of examinations, etc. are carried out according to the foreign conditions.

It is equally important for Germany and Estonia in particular to fulfil the requirements of the competent chamber of engineers (or the corresponding institution) in order to secure recognized qualifications.

#### Consulting results and foreseeable implementations in participating countries

##### Germany

In Germany, dual Bachelor's degree programs are already being implemented in many different ways.

In Hamburg, it was decided that the vocational schools involved in dual vocational training (1st center level) as well as in further vocational training and technical training (2nd center level) will establish a vocational university, which will run dual Bachelor's degree programs (3rd center level) from 2021.

Project Partner the Vocational Training and Technology Centre of the Schwerin Chamber of Skilled Crafts, Germany, cooperates with vocational schools, is involved in dual vocational training, conducts further vocational training and master craftsman training and, during the course of the project, has entered into cooperation with a private university in order to implement the third stage of the competence center.

### Poland

Project Partner Tadeusz Tanski Mechanical and Logistics School Complex, Poland, has developed the first stage of a "Mechatronic" competence center within the project period, the second stage will be implemented with a technician training course in September 2020. In addition, the realization of dual Bachelor degree programs is planned in cooperation with a university. It is planned to start in September 2022, when the first round of the two-year technician training, whose graduates also have a university entrance qualification, has been completed.

In Poznan, Poland, a cooperation between Poznan University of Life Sciences and Wielkopolska Craft Chamber in Poznan was developed, further education courses were conducted and several modules of a dual Bachelor's program were tested. The implementation of complete Bachelor programs is currently being prepared.

### Lithuania

Vocational education training (VET) programs are provided by VET schools, VET centers, labor market training centers or other institutions which have the right to provide VET. The names of those institutions may vary.

VET programs are provided at NQF levels 1-4.

A new 2-year pilot VET program for hospitality services administrators at NQF level 5 (EQF level 5) started to be provided in 2016. A VET diploma (NQF/EQF level 4) and three-year work experience are required to enter the program.

Currently, there are 61 state vocational education institutions in Lithuania and 11 labor market training centers or other institutions which have the right to provide VET.

The vocational training system includes initial vocational training, continuing vocational training and vocational guidance. Provision of VET programs is possible only after getting license from by the Ministry of Education and Science. Only VET programs registered into the State register of programs and qualifications can be provided.

Continuing VET programs enable learners to improve qualification, obtain a new qualification or acquire new competencies for a specific job or function. These programs involve a large number of people who already have higher education or are studying at the same time in higher and vocational schools (final year students) and working at the companies. They study in vocational schools in the evenings, after work.

Since 2010, one of the changes in VET system is the transition to national modular VET programs and designing/approving of VET programs are under the competence of authorized institution – the Qualifications and Vocational Education Training Development Centre. Sectoral qualifications standards or, in their absence, VET standards are used for developing programmers’ curricula. VET providers and enterprises can also initiate and design programs, but the quality of the VET program has to be evaluated by the Centre.

Since the beginning of 2014, nineteen sectoral practical training centers (SPTCs) have been officially opened. It is foreseen to establish 42 SPTCs overall. SPTCs aim to assure that learners gain practical skills matching labor market needs, using the latest technologies and equipment.

These centers will be open to students from VET, higher education institutions, employees from sector enterprises, vocational teachers and others. The centers will concentrate on technologies in specific sectors.

The SPTCs operating in these sectors: retail and wholesale sector, hotel and restaurant sector, food sector, beauty sector, transport sector, agricultural sector, textile sector, construction sector.

Construction sector practical training center (CSPTC) in Vilniaus statybininku rengimo centras (VSRC) was established in 2015. Objectives of the center are: increase the quality of VET services, accessibility to students in Vilnius region and other Lithuanian vocational training institutions, colleges, universities, general education schools. Also, to enable the realization of new initiatives and continuing vocational training programs for the widest possible range of users.

#### Service Groups

- VSRC VET students.
- Pupils in general education.
- Construction company workers.
- Architects, designers, project managers, etc. employees of construction companies.
- High school students.
- Students from other VET institutions.
- Vocational teachers in VET institutions.
- Labor Exchange clients – the unemployed.
- Immigrants, refugees.
- Other persons who wish to acquire qualifications or competences in the field of construction.

VSRC has contract with Vilnius Gediminas Technical University and Vilnius College of Technologies and Design. Students of this institutions come to VSRC to gain and improve practical skills. Similar examples can be found in other vocational institutions. Employers have very positive opinion about this possibility.



In conclusion, establishing the 3-level competence centers is a good idea and the foundations for this already exist in Lithuania. SPTCs could become part of the German proposed model. The basis of the legal framework is ready for this. The legal framework is adapted to the needs of the labor market.

Vilnius Builders Training Center, Lithuania, started dual vocational training during the course of the project as well as further and technician training. A cooperation was started with the state-run Vilnius Gediminas Technical University, with which a dual Bachelor's program in Electrical Engineering will be carried out from September 2020.<sup>1</sup>

Panevezys Chamber of Commerce, Industry and Crafts has carried out consultations of the 3-level competence center concept with Lithuanian SMEs, vocational schools, Panevezys College and bodies of public administration. All representatives of business, education and administration strongly agree that qualified specialists and innovations are the key factors for successful activity and growth of all companies.

Dual vocational training has been known and discussed in Lithuania for many years, but its practical implementation is still rather fragmented. Ministry of Education and Science has set up a legal framework for dual training in Lithuania but there is lack of skills in its implementation and good practices and, most importantly, lack of social dialogue between educational institutions and business. Quick changes in Lithuanian education system are unlikely, strategic decisions are needed but we already have many good examples of successful dual training implementation. At the moment there are 19 sectoral practical training centers established in Lithuania (the total planned number is 42). These centers are provided with the newest equipment of a certain sector; their goal is to provide possibility for students, employees and the unemployed to gain practical skills, to improve their qualification by using modern equipment and the latest technologies. The center cannot fully substitute work-based learning in companies, but they are a good basis for practical training.

Though today work-based learning is not yet ready to be developed fully in all sectors of Lithuanian economy and education, it can be implemented gradually in certain sectors that are ready for such changes. Industrial business sectors are more prepared to participate in dual training system and companies already provide work-based learning. This way of training is especially important for companies where the work processes are very specific, require specific know-how or innovations. Work-based learning helps them to meet their needs for qualified workforce.

When discussing the concept of the 3-level competence centers, the idea that strong learners could be provided with additional vocational education courses and could receive additional qualifications was strongly supported. For example, representatives of construction companies want that students of construction could receive additional qualification of high scalars during their vocational studies.

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<sup>1</sup> Designing and implementing a dual Bachelor's degree study course with integral attainment of a Bachelor's and Master's degree, 2017 - 2020

Further training is very important to keep people up to date in the labor market. All further training programs should be demand and practice-oriented, flexible in their duration and content. Further training courses on business start-up or take-over as well as dual bachelor studies could help to meet the strongly growing need for innovative entrepreneurs and managers for SMEs. Granting qualification of a master craftsman or technician would not be so important as all students can enter universities after completing vocational or high school in Lithuania.

Formally dual bachelor studies are not implemented in Lithuanian colleges or universities but practically the part of curricula devoted to practical training in companies is large enough (1/3 of the curricula) thus they could be considered as introduction to dual bachelor studies. Cooperation between universities and companies ensures exchange of information, experience, transfer of

knowledge and technology as well as larger amounts of research and development work. The advantage of the 3-level competence center concept is that there are several alternative ways of dual bachelor program implementation. Such studies could be implemented in Lithuania with the approval of the Ministry.

The three-level competence centers could be financed by the state and jointly organized in close cooperation of all partners - vocational schools, universities and enterprises or chambers/business associations. Participation of all these 3 parties is crucial for the success of such centers. Establishment of such centers would require further training both of teachers and trainers in the companies but no additional investment in facilities would be needed.

In conclusion, the 3-level competence centers would be a good solution in solving the problem of rapidly growing shortage of young entrepreneurs, managers and skilled workers in Lithuania as well as the lack of innovation promotion.

## Latvia

As a result of structural reforms in vocational education and training, 22 competence centers have been created by merging existing vocational education institutions. A very good material and technical training base has been created.

In order to fill the new competence centers, it is necessary to expand their offer by developing new curricula. More attention should be paid to continuing adult education in the context of lifelong learning, which could be achieved through competence centers.

There are centers with which the Education Quality Service of the Ministry of Education and Science has signed a contract for the assessment of professional competence acquired outside the formal education system. This means that people who have acquired their knowledge and skills outside the formal education system or during work have the opportunity to obtain professional qualifications.

There are competence centers involved in ESF project “Improving the Professional Competence of Employed Persons” through non-formal education programs.

There is a bachelor study program that is already implemented in Latvia:

- 3 years of academic study (not practice, only academic study) and
- 1-2 years of professional studies (20 CP practice) for obtaining professional opinion
  - ½ year theory
  - ½ year internship, developing a qualifying job
- After assertion: Bachelor and Professional diploma.

There are parallel education systems in Latvia: state vocational education and vocational education system implemented by the Latvian Chamber of Crafts. The Latvian Chamber of Crafts offers the opportunity to:

- undergo qualification and certification procedures (including after receiving Bachelor's),
- for educators who have not received higher pedagogical education, to take a professional examiner's qualification to be able to work in vocational schools,
- “Train the Trainer in SMEs” training for SME practice managers
- “Vocational & occupational education” for educators
- “Business Administration and Management” training.

These opportunities are offered to SMEs, students and educators of competence centers and academics who are interested.

In cooperation with the Hanseatic Parliament, the pilot projects on the above-mentioned topics have been successfully implemented by participating in projects managed by the Hanseatic Parliament.

### Estonia

In Estonia SMEs, chambers, vocational schools are interested in developing 3rd level competence centres between different education levels. Due to the rapid changes in technology the labour market needs new know-how and flexible learning opportunities.

Integration of different levels of education in Estonia is more of a problem between academic higher education and vocational education. The contrast is that academic universities do not want to recognize the knowledge and skills that students have acquired from vocational schools. In order to overcome this contrast, it is possible to make mutual agreements between universities and vocational training schools. The pressure from the employers is high enough to consider that now and in the future. There have also been occasions when a baccalaureate becomes a vocational school student in order to acquire necessary skills and manage better in the labour market.

The problem with the integration of different educational levels in the current occupational standards in Estonia is that the learning outcomes at levels 5 and 6 are significantly different. As long as curricula are conducted on the basis of occupational standards, it is difficult to combine different levels.



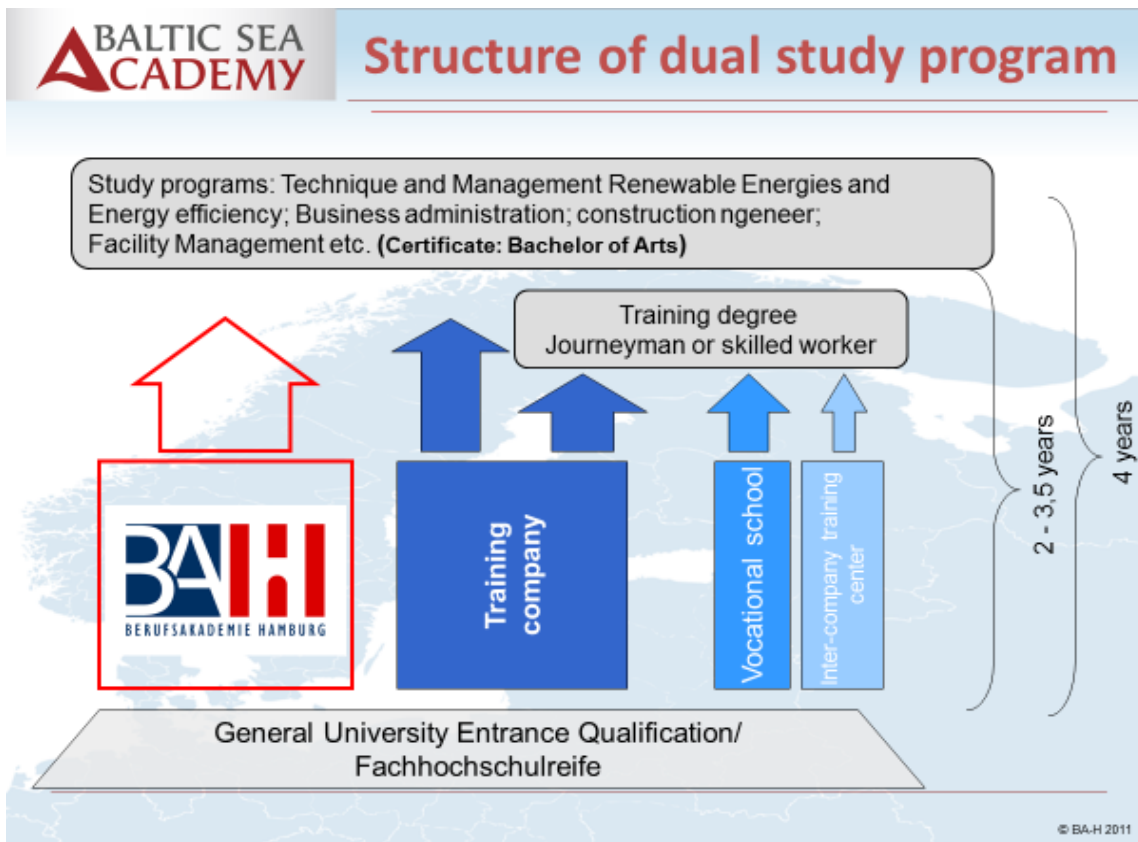
Võru County Vocational Training Centre has been developed cooperation between Estonian University of Life Sciences and different enterprises since 2015 in the field of wood processing. Unfortunately, law regulations to carry out dual Bachelor courses combined with a dual vocational training and enterprise are missing in Estonia, but our institution is able to implement the study course on the basis of agreement between two parties.

In the Estonian education system, descriptions of level 5 and level 6 are not clear as well as linking to the bachelor programme. Entrepreneurs are interested in a skilled and qualified workforce with occupational qualification certificate, and learners could be motivated to continue their further studies after graduating vocational education institution in baccalaureate or postgraduate course of study.

Changes in the education system will be discussed at national level in March. Estonia wishes to introduce the concept of higher vocational higher education (higher VET), which would help to explain better its differences between applied and academic higher education.

## 4. Application notes and Best Practices

- a) Prerequisites: A-levels or permission to study at a college/university
- b) Total duration: 3 – maximal 4 years
- c) Structure:
  - First and second year vocational training in the company and in the vocational school as well as studies at the university or college
  - After the second year of final examination vocational training (journeyman or skilled worker)
  - Third- and fourth-year university or college studies and learning or work in a company
  - After three or maximal 4 years Bachelor exam
- d) Learning venues of the Competence Center: College or University, vocational school and companies
- e) Distribution of training time: 50% in the company and 50% college or university



- f) Alternative implementation:
  - After completing general education with a degree "University Qualification" 3 - 4 years of vocational training and Bachelor's degree in the Competence Center
  - If a course of study is only started after completion of the vocational training (first stage of the competence center), the Bachelor's degree can be combined with a professional master's or technician's training in higher education and

companies, so that recognized Bachelor's and professional master's or technician's degrees can be acquired in an integrated manner.

- If a course of study is only started after the Technician or Master training (second level of the Competence Center), shortened Bachelor courses of study with crediting of the acquired competences within the scope of the Technician or Master training are recommended.

4 Years 1.800 hours every year	7.200 hours
Training time in the company	4.100 hours
Specific vocational school education: 500 lessons of 45 minutes each	400 hours
Study at the college or university 1,750 lecture hours of 45 minutes each	1.400 hours
Self-study, Bachelor Thesis, Visit to optional offers	1.300 hours



g) Organization of tripartite competence centers

It is optimal for the three-tier competence centers to be supported jointly by all three training partners - vocational schools, universities and enterprises (or their representatives, such as chambers or business associations), e.g. in the form of a non-profit limited liability company in which the training partners are partners.

This form of organization cannot be realized in the short and medium term in all countries. Instead, binding cooperation agreements should be concluded between the training partners with clear regulations on the distribution of tasks, rights, obligations, responsibilities, etc.

#### h) Coordination with companies, chambers and associations

The Bologna-compliant degree programs are developed on the basis of the respective national law. Within this framework, the universities themselves decide on all details of the implementation, e.g. studies in block or day form, credit points acquired in the practical phase, etc.

In order to meet the needs of companies and to win them as training partners, it is essential to consult with companies and their interest groups (chambers or associations). For this reason, the chambers should also be involved in the competence centers as shareholders or permanent cooperation partners.

Since 2004, the Baltic Sea Academy has developed and very successfully implemented dual Bachelor's degree courses with two members "Berufsakademie Hamburg" and "Hochschule 21", which combine vocational training or work in a company with a Bologna-compliant course of study. Of these ten courses of study, two best practices for further information and clarification of the implementation of dual courses of study can be found below.

- Brief description of the concept for the dual course of studies “Management of renewable building energy technology” (Bachelor of Engineering)
- Curriculum overview Dual Bachelor of Business Administration SME

In addition, Baltic Sea Academy and "Hochschule 21" have developed two dual courses of study, which have been running since 2018 and combine a Bachelor's degree with a Master's training.<sup>2</sup>

All best practices of the dual study programs of the Baltic Sea Academy and its member universities are available free of charge for the realization of the third level of industry competence centers of vocational education and training in all countries.

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<sup>2</sup> Designing and implementing a dual Bachelor's degree study course with integral attainment of a Bachelor's and Master's degree, 2017 - 2020

## Best Practice

# **Dualer Studiengang Management Erneuerbarer Gebäudeenergietechnik (Bachelor of Engineering)**



# **Kurzbeschreibung des Konzeptes für den dualen Studiengang Management Erneuerbarer Gebäudeenergietechnik (Bachelor of Engineering)**

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## 1 Bedarf der Wirtschaft und des Handwerks

Der Klimawandel und der stetig steigende Energiebedarf sind die existenziellen Herausforderungen unserer globalen Gesellschaft. Ein wirksamer Klimaschutz durch Reduzierung der CO<sub>2</sub>-Emissionen ist zum zentralen Ziel auf allen Ebenen der regionalen, nationalen und internationalen Umwelt- und Energiepolitik geworden. Aufgrund des hohen Anteils an Energie, der weltweit für die Beheizung und Klimatisierung von Gebäuden aufgewendet wird, ist die Steigerung der Energieeffizienz von Gebäuden ein wichtiger Ansatzpunkt für die Erreichung der Klimaschutzziele. In Kombination mit Förderprogrammen für energetische Gebäudesanierung und die Nutzung erneuerbarer Energien führen diese Regelungen zu Rahmenbedingungen, die im Handwerk und im gewerblichen Mittelstand langfristig zu einer erhöhten Nachfrage nach Produkten und Dienstleistungen und somit zu einem zusätzlichen Bedarf an qualifizierten Fach- und Führungskräften mit Schwerpunkt im Bereich der erneuerbaren Energien nach sich ziehen.

Betriebe im Handwerk und im gewerblichen Mittelstand, die im Bereich Gebäudeenergie-technik tätig sind, brauchen Mitarbeiterinnen und Mitarbeiter, die über ein breites Spektrum an Qualifikationen und Kompetenzen verfügen.

## 2 Ziele des Studiengangs MEG

Die Studierenden sollen neben technischem und betriebswirtschaftlichem Fachwissen auch Fach- und Methodenkompetenzen, personale und sozial-kommunikative Kompetenzen als umfassende berufliche Handlungskompetenzen erwerben. Mit diesen Kompetenzen sollen sie ihren Betrieb oder ihre Organisation entscheidend dabei unterstützen, zukunftsorientierte und unter technischen, ökologischen und ökonomischen Gesichtspunkten wettbewerbsfähige Produkte und Dienstleistungen anzubieten. Sie werden durch das Studium befähigt, für technische und betriebswirtschaftliche Problemstellungen wissenschaftlich fundierte Analysen und Lösungskonzepte zu entwickeln sowie für deren Umsetzung in unternehmerischer, gesellschaftlicher und persönlicher Hinsicht Verantwortung zu übernehmen.

Das Studienangebot konzentriert sich auf den Einsatz erneuerbarer Energien und die rationelle Energieverwendung in privaten Wohnbauten sowie gewerblichen und öffentlichen Zweckbauten. Dabei werden Gebäudesysteme als technische und funktionelle Systeme verstanden, die mit einer festen Nutzungsabsicht erstellt werden und über ihre Lebensdauer auch unter ökonomischen Gesichtspunkten unterhalten werden müssen.

Die ganzheitliche Betrachtung erfolgt aus der Perspektive eines Kundenberaters und Planers oder vergleichbarer Berufs- und Tätigkeitsfelder. Schwerpunkte der Betrachtung sind das konkret notwendige Handlungs- und Funktionswissen wie auch der Gebrauchswert der Technik. Im Vordergrund steht eine wissenschaftsbasierte und praxisbezogene prozessorientierte Planung, Inbetriebnahme und Nutzung von Anlagen sowie die Umsetzung von Maßnahmen zur Erhöhung der Energieeffizienz.

Im Einzelnen vermittelt der Studiengang "Management Erneuerbarer Gebäudeenergie-technik" den Studierenden:

- ein ganzheitliches Verständnis für die technischen, ökologischen und ökonomischen Herausforderungen von erneuerbaren Energien und rationeller Energieverwendung in Gebäuden,
- die Fähigkeit, ein technisch anspruchsvolles und beratungsintensives Produkt- und Dienstleistungsangebot im Bereich "Erneuerbare Gebäudeenergie-technik" interdisziplinär zu entwickeln und zu vermarkten,
- die Fach- und Methodenkompetenz, um technische Lösungen für Gebäude interdisziplinär zu planen, umzusetzen und in Betrieb nehmen zu können,
- die soziale und kommunikative Kompetenz, um sich mit Experten fachlich auszutauschen, Mitarbeiter fachlich anzuleiten sowie Kunden interdisziplinär zu beraten,

- die Fach- und Methodenkompetenz, um an der strategischen Entwicklung der Unternehmenspolitik mitzuwirken,
- die Fach- und Methodenkompetenz, um an der operativen Unternehmensführung mitzuwirken und dabei wirtschaftliche und technische Leitungsaufgaben zu übernehmen und
- die Fach- und Methodenkompetenz, um betriebliche Leistungsprozesse zu gestalten sowie die erzielten Ergebnisse systematisch zu erfassen, zu analysieren und für kontinuierliche Verbesserungsprozesse zu nutzen.

Überfachliche Aspekte werden schwerpunktmäßig durch die Module T $\ddot{U}$  1 – T $\ddot{U}$  5 (Überfachliche Module) verfolgt. Die betriebswirtschaftlichen Kompetenzen werden überwiegend durch die Module TM 1 – TM 8 (Managementbezogene Kernmodule) vermittelt. Die technischen Kompetenzen werden durch die Module TK 1 – TK 9 (Technische Kernmodule) verfolgt.

Weiterhin gibt es interdisziplinär angelegte Module, die sowohl fachliche als auch überfachliche Aspekte verfolgen: TS 1 – TS 4 (Technische Spezialisierungsmodule), TMS 1 – TMS 3 (Managementbezogene Spezialisierungsmodule), TPR 1 - TPR 4 (Praxisreflexionen mit Schwerpunkt Technik oder Management) sowie die Bachelor-Arbeit.

Die wissenschaftlich-methodischen Kompetenzen der Studierenden werden durch das überfachliche Kernmodul T $\ddot{U}$  1 (Wissenschaftliches Arbeiten und Forschungsmethodik) gefördert. Darüber hinaus werden sie insbesondere durch die oben angegebenen, interdisziplinär angelegten Module, die sowohl fachliche als auch überfachliche Aspekte verfolgt, gefördert und gefordert.

### 3 Inhaltliche Umsetzung

Der Studiengang „Management Erneuerbarer Gebäudeenergie-technik“ besteht aus insgesamt 33 angebotenen Pflicht- und Wahlpflichtmodulen sowie einer Bachelor-Arbeit. Die Module sind in die folgenden Modulgruppen unterteilt:

Modulgruppe	zu erwerbende CP
Managementbezogene Kernmodule	40
Überfachliche Kernmodule	25
Technische Kernmodule	60
Managementbezogene Spezialisierungsmodule	5
<i>Summe CP (Theorieanteil)</i>	<i>130</i>
<i>Praxisanteil</i>	
- Technische Spezialisierungsmodule	12
- Praxisreflexionen	28
<i>Summe CP (Praxisanteil)</i>	<i>40</i>
Bachelor-Arbeit	10
<i>Gesamtsumme</i>	<i>180</i>

#### Kernmodule

In den Kernmodulen werden umfangreiche Kompetenzen für wissenschafts- und anwendungsorientierte Anforderungen in Management und Technik erworben (siehe: Managementbezogene Kernmodule lfd. Nr. TM 1 – TM 8 und Technische Kernmodule TK 1 - TK 9).

#### Überfachliche Kernmodule

In den überfachlichen Kernmodulen werden einerseits Kompetenzen erworben, die zu einem ganzheitliches Verständnis betrieblicher Problemlösungen in der Praxis beitragen. Andererseits werden hier übergreifende Grundlagen für methodengeleitetes wissenschaftliches Arbeiten zur

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Systematisierung und Lösung praxisnaher Probleme gelegt. Dies dient darüber hinaus auch als Beitrag zur Vorbereitung für das Absolvieren anschließender Masterstudiengänge (siehe: Überfachliche Kernmodule Tü 1 - Tü 5).

**Managementbezogene Spezialisierungsmodule** (Wahlpflichtbereich)

Zur betriebswirtschaftlichen Vertiefung ist von den Studierenden je eines der drei angebotenen Module (TMS 1 - TMS 3) je nach individuellem Interesse zu belegen.

## Praxisanteile

Die Praxisanteile setzen sich zusammen aus Praxisreflexionen und technischen Spezialisierungsmodulen.

- **Praxisreflexionen**

Im Rahmen der Berücksichtigung betriebsspezifischer Erfordernisse und Anforderungen sind je zwei Praxisreflexionen im Bereich Management und im Bereich Technik im Umfang von insgesamt 28 CP zu erstellen. Die hierfür zu erfüllenden Anforderungen sind in der Ordnung zur Erstellung von Praxisreflexionen geregelt (siehe Anhang X: Ordnung zur Regelung der Erstellung von Praxisreflexionen).

- **Technische Spezialisierungsmodule** (Wahlpflichtbereich):

Im diesem Bereich absolvieren die Studierenden zwei von vier angebotenen Modulen (TS 1 - TS 4) je nach individuellem Interesse. Dieser Wahlpflichtbereich dient als fachliche Ergänzung und Vertiefung der Kompetenzen, die der Studierende in den technischen Kernmodulen (TK 1 – TK 9) erwirbt. Im Mittelpunkt dieser Module stehen die interdisziplinäre Analyse praxisbezogener Problemstellung in der Gebäudeenergie-technik sowie die Planung und Dokumentation von geeigneten Lösungen. Die oben beschriebenen technischen Spezialisierungsmodule (TS 1 – TS 4) werden aufgrund des projektartigen Charakters und der geforderten interdisziplinären Analyse praxisbezogener Problemstellungen in der Gebäudeenergie-technik sowie der Planung und Dokumentation von geeigneten Lösungen als praxisbasierte Ausbildungsanteile angesehen, die im Rahmen des dualen Studiengangs kreditiert werden.

## 4 Abschlussbezeichnung Bachelor of Engineering

Es wird die Abschlussbezeichnung Bachelor of Engineering (B. Eng.) vergeben. Als Orientierung für die Curriculumstruktur des Studiengangs wurde der Qualifikationsrahmen des Wirtschaftsingenieurwesens herangezogen. Die Module können den Kernbereichen dieses Qualifikationsrahmens wie folgt zugeordnet werden.

Kernbereich	Module <sup>1</sup>	ECTS-Punkte
Ingenieurwissenschaften, Naturwissenschaften, Mathematik (mindestens 55 ECTS-Punkte)	TK 1 – TK 9	60
Wirtschafts-, Rechts- und Sozialwissenschaften (mind. 45 ECTS-Punkte)	TM 1 – TM 8, TMS 1 – TMS 3	45
Integrationsfächer (mind. 25 ECTS-Punkte)	TÜ 2, TÜ 4, TS 1 – TS 4, TK 4	29
Soft Skills und Fremdsprachen (mind. 10 ECTS-Punkte)	TÜ 1, TÜ 3, TÜ 5	15
Praktika (mind. 15 ECTS-Punkte)	TPR 1 – TPR 4	28
Abschlussarbeit (mind. 10 ECTS-Punkte)	Bachelor-Arbeit	10

<sup>1</sup> Die Zuordnung ist aufgrund des interdisziplinären Charakters insbesondere der technischen Kernmodule, der technischen Spezialisierungsmodule und der Praxisreflexionen teilweise nicht eindeutig möglich, z. B. ist das Modul TK 4 sowohl dem Bereich Ingenieurwissenschaften als auch den Integrationsfächern zuzuordnen.

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Wie aus der obenstehenden Zuordnung der Module auf die Kernbereiche des Qualifikationsrahmens des Wirtschaftsingenieurwesens ersichtlich, werden die Mindestumfänge der Kernbereiche erfüllt. Hierdurch ist die Vergabe der neuen Abschlussbezeichnung B.Eng. gerechtfertigt.

## 5 Didaktisches Konzept

Damit die Absolventen aktuelle und zukünftige Herausforderungen im Tätigkeitsbereich der Gebäudeenergie-technik bewältigen können, brauchen sie ein breites Spektrum an fundierten wissenschafts- und praxisbasierten Kompetenzen.

Als dualer Studiengang ist das didaktische Konzept ausgerichtet auf eine wissenschafts- und anwendungsnahe Vermittlung von Kompetenzen im Studium an der Berufsakademie und eine darauf abgestimmte praktische Ausbildung im Betrieb.

Die Lehrveranstaltungen werden an durchschnittlich drei Wochenenden pro Monat (ausgenommen lehrveranstaltungs-freie Zeiten) durchgeführt. Darüber hinaus wird im Frühjahr und im Herbst des Studienjahres je ein ca. 14-tägiger Vollzeitblock in der Berufsakademie absolviert. Zwischen den Lehrveranstaltungen werden die Studierenden im Betrieb ausgebildet. Diese Organisationsform ermöglicht es den Studierenden zwischen den Lehrveranstaltungen

- das Gelernte in der Praxis zu reflektieren sowie
- Lehrveranstaltungen im Rahmen des Selbststudiums vor- und nachzubereiten.

Um einen intensiven Kompetenzerwerb zu gewährleisten, werden die Lehrveranstaltungen überwiegend in kleinen Gruppen bis ca. 30 Studierenden durchgeführt. Selbst in Veranstaltungen, die als „Vorlesung“ für größere Gruppen konzipiert sind, dominiert in der Regel das interaktive Lehrgespräch. In den kleineren Gruppen werden teilnehmeraktivierende und kooperative Methoden wie Partner-, Gruppenarbeiten und Fallstudien eingesetzt. Im Rahmen der Partner- und Gruppenarbeiten werden die Studierenden angeregt, die Erfahrungen aus der Praxis ihres eigenen Ausbildungsbetriebs einzubringen und dadurch die Theorie und die Praxis mit Hilfe des Lehrenden selbst in Beziehung zu setzen.

Der Bezug der praktischen Ausbildungsanteile zum Studium wird überwiegend durch die Praxisreflexionen gewährleistet und angeleitet. Praxisreflexionen sind schriftliche Ausarbeitungen, die im Rahmen der betriebspraktischen Ausbildung über Sachverhalte, die im Kontext des Studiums an der Berufsakademie stehen, erstellt werden. Praxisreflexionen haben den Charakter von Projektarbeiten, in denen konkrete Problemstellungen der betrieblichen Praxis mit dem im Studium erworbenen wissenschaftsbasierten Fach- und Methodenkompetenzen bearbeitet werden sollen. Bei der Erstellung von Praxisreflexionen werden die Studierenden von einem Lehrenden der Berufsakademie betreut.

Ein Schwerpunkt des didaktischen Konzeptes liegt auf seminaristischen Lehrveranstaltungen. Die kleinen Studiengruppen ermöglichen einen intensiven Dialog mit den Lehrenden im Rahmen von Lehrgesprächen, in denen Inhalte mit Bezug zur betrieblichen Praxis der Studierenden entwickelt werden. Mit Hilfe von Übungen, die auch als Gruppenarbeiten konzipiert sind, werden Lerninhalte angewendet und vertieft. Darüber hinaus werden zur Vermittlung komplexer Lerninhalte und zur Schulung ganzheitlichen Denkens in einzelnen Modulen Fallaufgaben und Fallstudien eingesetzt.

### Praxis-Projekte

#### Projektmodule

##### Wahlpflichtbereich Technik

- TS 1 Praxis-Projekt Photovoltaik-Anlagen
- TS 2 Praxis-Projekt Solarthermische Anlagen
- TS 3 Praxis-Projekt Gebäudesystemtechnik
- TS 4 Praxis-Projekt Multifunktionale Erzeugungsprozesse

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Diese Lehrveranstaltungen sind als eigenständige praxisbezogene Projekte im Studium verankert, dort werden komplexe Aufgabenstellungen, Fallstudien oder Simulationen durchgeführt.

### Praxisreflexionen

Der Studienplan sieht darüber hinaus die Erstellung von vier Praxisreflexionen im Umfang von je 7 ECTS-Punkten vor (je eine in den Studienjahren 1-4). Im Rahmen der Praxisreflexion sollen die Studierenden eine Untersuchung im Sinne eines praxisbezogenen Projektes planen, durchführen und die Ergebnisse reflektieren. Die Studierenden erstellen über die Aufgabebearbeitung einen Bericht, der als Leistungsnachweis bewertet wird. Die Module, zu denen der Studierende die Praxisreflexionen absolviert, wählt der Studierende in Rücksprache mit seinem Ausbildungsbetrieb selbst aus.

Die Praxisreflexionen dienen zur Entwicklung von Transfer- und Problemlösungskompetenz durch die Anwendung der Theorie im eigenen Betrieb und fördern durch die Notwendigkeit der engen Abstimmung und Zusammenarbeit mit den Vorgesetzten und Mitarbeitern sowie Kunden im Betrieb auch die sozial-kommunikative Kompetenz der Studierenden.

Im Unterschied zu den Praxis-Projekten steht bei den Praxisreflexionen ein Großteil der Studieninhalte/-themen aus den bis zum Prüfungszeitpunkt angebotenen Lehrveranstaltungen für die Wahl von individuellen betriebsbezogenen Problemstellungen zur Verfügung. Die Praxisreflexionen werden als wissenschaftlich begleitetes Selbststudium am Lernort Betrieb absolviert.





Establishment of two-stage industry  
competence centers of vocational education and training

Co-funded by the  
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## Best Practice

# **Dualer Bachelor-Studiengang Betriebswirtschaft KMU**

Modul Nr.	Modul/ Studieneinheit	Credit Points (CP) im Studienjahr				Gesamt		Sum Std.	Prüfungsleistungen (Prüfungsform sowie -dauer in Minuten)	Sum CP
		1.	2.	3.	4.	Std. Präsenzstud.	Std. Selbststud.			
<b>Überfachliche Module</b>										
<b>BWÜ 1</b>	<b>Wissenschaftliches Arbeiten und Forschungsmethodik</b>	6				48	102	150		6
BWÜ 1.1	Wissenschaftliches Arbeiten					24	51		Klausur (120 Min.)	
BWÜ 1.2	Grundlagen der Forschungsmethodik und Statistik					24	51			
<b>BWÜ 2</b>	<b>Wirtschaftsenglisch</b>	6				64	86	150		6
BWÜ 2.1	Wirtschaftsenglisch					64	86		Klausur (90 Min.) und mündl. Prüfung (20 Min.)	
<b>BWÜ 3</b>	<b>Kommunikation und Beratung</b>		6			52	98	150		6
BWÜ 3.1	Grundlagen der Kommunikation und Beratung					32	60		Klausur (120 Min.)	
BWÜ 3.2	Präsentation					20	38			
<b>BWÜ 4</b>	<b>Projektmanagement</b>			5		46	79	125		5
BWÜ 4.1	Grundlagen des Projektmanagements					46	79		Klausur (120 Min.)	
<b>Kernmodule</b>										
<b>BWM 5</b>	<b>Volkswirtschaftliche Grundlagen</b>	5				46	79	125		5
BWM 5.1	Volkswirtschaftliche Grundlagen					46	79		Klausur (120 Min.)	
<b>BWM 6</b>	<b>Betriebswirtschaftliche Grundlagen I</b>	5				46	79	125		5
BWM 6.1	Betriebswirtschaftliche Grundlagen I					46	79		Klausur (120 Min.)	
<b>BWM 7</b>	<b>Betriebswirtschaftliche Grundlagen II</b>	5				46	79	125		
BWM 7.1	Betriebswirtschaftliche Grundlagen II					46	79		Klausur (120 Min.)	
<b>BWM 8</b>	<b>Personalmanagement</b>	7				72	103	175		7
BWM 8.1	Personalmanagement in KMU					38	54		Klausur (120 Min.)	
BWM 8.2	Personalführung					34	49			
<b>BWM 9</b>	<b>Marketing</b>	6				58	92	150		6
BWM 9.1	Grundlagen des Marketing					16	26		Klausur (120 Min.)	
BWM 9.2	Instrumente des Marketing in KMU					42	66			
<b>BWM 10</b>	<b>Externes Rechnungswesen</b>		7			62	113	175		7
BWM 10.1	Buchführung					24	43		Klausur (120 Min.)	
BWM 10.2	Jahresabschluss, GuV und Bilanzierung					38	70			
<b>BWM 11</b>	<b>Investition und Finanzierung in KMU</b>		6			58	92	150		6
BWM 11.1	Investition					20	34		Klausur (120 Min.)	
BWM 11.2	Finanzierung					38	69			
<b>BWM 12</b>	<b>Wissensmanagement in KMU</b>		6			52	98	150		6
BWM 12.1	Wissensmanagement in KMU					52	98		Klausur (120 Min.)	
<b>BWM 13</b>	<b>Wirtschafts- und arbeitsrechtliche Grundlagen</b>		6			58	92	150		6
BWM 13.1	Grundlagen des Wirtschaftsrechts					30	48		Klausur (120 Min.)	
BWM 13.2	Arbeits- und Sozialversicherungsrecht					28	44			
<b>BWM 14</b>	<b>Internes Rechnungswesen und betriebswirtschaftliche Steuerlehre</b>		7			62	113	175		7
BWM 14.1	Kosten- und Leistungsrechnung					38	70		Klausur (120 Min.)	
BWM 14.2	Grundlagen der betriebswirtschaftlichen Steuerlehre					24	43			
<b>BWM 15</b>	<b>Materialwirtschaft</b>			6		52	98	150		6
BWM 15.1	Grundlagen der Materialwirtschaft und Beschaffung					32	53		Klausur (120 Min.)	
BWM 15.2	Grundlagen der Lagerwirtschaft					20	45			

Modul Nr.	Modul/ Studieneinheit	Credit Points (CP) im Studienjahr				Gesamt		Sum Std.	Prüfungsleistungen (Prüfungsform sowie -dauer in Minuten)	Sum CP
		1.	2.	3.	4.	Std. Präsenzstud.	Std. Selbststud.			
<b>BWM 16</b>	<b>Organisation und Change Management</b>			7		62	113	175		7
BWM 16.1	Grundlagen der Organisationslehre und Organisationsentwicklung					28	51		Klausur (120 Min.)	
BWM 16.2	Change Management in KMU					34	62			
<b>BWM 17</b>	<b>Controlling I</b>			6		52	98	150		6
BWM 17.1	Strategisches Controlling in KMU					32	60		Klausur (120 Min.)	
BWM 17.2	Grundlagen des Risikomanagements in KMU					20	38			
<b>BWM 18</b>	<b>Controlling II</b>			6		52	98	150		6
BWM 18.1	Grundlagen operativer Unternehmensplanung					16	28		Klausur (120 Min.)	
BWM 18.2	Operatives Controlling in KMU					36	70			
<b>BWM 19</b>	<b>Personalentwicklung in KMU</b>			6		48	102	150		6
BWM 19.1	Personalentwicklung in KMU					48	102		Klausur (120 Min.)	
<b>BWM 20</b>	<b>Ausbilderqualifizierung in KMU</b>			7		72	103	175		7
BWM 20.1	Ausbilderqualifizierung in KMU					72	103		Klausur (180 Min.), praktische Prüfung (30 Min.)	
<b>Wahlpflichtmodule (zwei aus fünf)</b>										
<b>BWM 21</b>	<b>Innovationsmanagement im KMU</b>			6		52	98	150		6
BWM 21.1	Grundlagen des Innovationsmanagements					32	60		Präsentation und Fachgespräch (30 Min.)	
BWM 21.2	Gestaltung von Prozess-, Produkt- und Dienstleistungsinnovationen in KMU					20	38			
<b>BWM 22</b>	<b>Entrepreneurship</b>			6		52	98	150		6
BWM 22.1	Unternehmensethik					16	30		Präsentation und Fachgespräch (30 Min.)	
BWM 22.2	Unternehmensgründung und -nachfolge					36	68			
<b>BWM 23</b>	<b>Wirtschaftsenglisch - Vertiefung</b>			6		52	98	150		6
BWM 23.1	Wirtschaftsenglisch - Vertiefung					52	98		Klausur (90 Min.) und mündl. Prüfung (20 Min.)	
<b>BWM 24</b>	<b>Einführung in die Wirtschaftsinformatik</b>			6		52	98	150		6
BWM 24.1	Grundlagen der Wirtschaftsinformatik					28	53		Portfolio mit Präsentation	
BWM 24.2	Digitalisierung von Geschäftsprozessen					24	45			
<b>BWM 25</b>	<b>Supply Chain Management</b>			6		52	98	150		6
BWM 25.1	Grundlagen des Supply Chain Managements					28	53		Portfolio mit mündl. Prüfung (20 Min.)	
BWM 25.2	Gestaltung von Logistik-Prozessen					24	45			

Modul Nr.	Modul/ Studieneinheit	Credit Points (CP) im Studienjahr				Gesamt		Sum Std.	Prüfungsleistungen (Prüfungsform sowie -dauer in Minuten)	Sum CP
		1.	2.	3.	4.	Std. Präsenzstud.	Std. Selbststud.			
<b>Praxismodule</b>										
BPR 26	Praxisreflexion 1	5				4	121	125	Portfolio mit Fachgespräch (Bearbeitungsdauer bis zu 6 Monate)	5
BPR 27	Praxisreflexion 2		7			4	171	175	Portfolio mit Präsentation und Fachgespräch (Bearbeitungsdauer bis zu 6 Monate)	7
BPR 28	Praxisreflexion 3			8		4	196	200	Praxisreflexion (Bearbeitungsdauer 8 Wo.)	8
BPR 29	Capstone-Projekt			7		32	143	175	Portfolio mit Präsentation und Fachgespräch (Bearbeitungsdauer bis zu 6 Monate)	7
BPR 30	Praxisreflexion 4				8	4	196	200	Praxisreflexion (Bearbeitungsdauer 8 Wo.)	8
<b>Bachelor-Arbeit</b>										
BWM 31	Bachelor-Arbeit				12			300	Bachelor-Arbeit (40-50 Seiten, Bearbeitungsdauer 12 Wochen)	12
CP p.a.		45	45	45	45					
Workload (Kontakt- und Selbststudium)						1260	2113			
Workload der Praxiselemente (Praxis-Std.)								827		
Workload der Bachelor-Arbeit								300		
Gesamtworkload des Studiengangs									4500	
Gesamtsumme CP des Studiengangs										180