The following table shows the acquired knowledge, skills and competencies after completion of the four main and 17 sub-modules:

1) Basics

1.1 Introduction and building physics fundamentals:

Minimum requirements for positive test result	Knowledge	Skills	Competencies
He/She knows the Passive House criteria by PHI and is able to assess the appropriate quality of plans and designs, as well as comply with in the case in his / her duty to provide warning.	He/she can explain the history of energy-efficient construction and the criteria of the Passive House Institute Darmstadt. He/she can describe the passive house components together with the associated U-values and the concepts of heat and primary energy demand, air tightness, and explain thermal bridges and energy transmittance of windows and describe the foundations and components of a living room ventilation system.	He/she can interpret and change the passive house-suitable U-values, surface temperatures, air exchange rates and humidity for greater comfort. He/she can calculate U-values homogeneous components and roughly adjust the compactness of the building. He/she can assess the interaction of the building orientation and the window properties.	He/she can assess the quality of civil engineering plans and designs, file a complaint if necessary and carry out his / her duty to warn against third parties.

1.2 Energy Performance Certificate and PHPP:

He/she knows the elements, possibilities and limitations of the energy performance certificate and the PHPP calculation and can interpret the results from this perspective.	He/she can explain the nine classes of the energy certificate of OIB and the terms heat demand, primary energy consumption, CO_2 emissions and overall energy efficiency factor. He/she understands the differences between the calculations of the energy certificate by OIB and the Passive House Planning Package (PHPP) from the Passive House Institute Darmstadt.	He/she understands his / her submitted calculations of the Energy Performance Certificate and the PHPP, is able to check U-values of individual components for plausibility and explain the differences in the results.	He/she can outline the advantages and disadvantages and application limitations of the two calculation methods and interpret the results in an overview.

1.3 Materials and Ecology:

He/she knows the basic principles of ecological cycles, the life cycle assessment of building materials, their labeling and various eco-labels, and can explain these things in their own	He/she understands the basic principles of ecological cycles, the life cycle assessment of building materials, their labeling and various eco-labels, and can this explain in their own	He/she can assess the possibilities and limitations of metallic and organic materials in his/her area of activity.	He/she may take a position in his/her work area to advise on the structurally and ecologically correct use of the most common building materials and instruct third parties

words and evaluate their proper use.	words.		how to do so. He/she can check building material supplies for accuracy and suggest alternatives if necessary.

2) New Buildings

2.1 Thermal insulation and heat storage:

He/she knows the principles of thermal insulation and heat storage as well as the material properties of the most common insulation materials and their applications. He/she can calculate required insulation thicknesses roughly and install insulation correctly in his/her area of activity.	He/she can explain the principles of thermal insulation and heat storage / heat release delay. He/she knows the material properties of the most common artificial and natural insulation materials and their applications in light, medium and heavy construction. He/she understands the importance of the so-called marker rule and the need for a wind tight building envelope.	He/she can calculate the required insulation thicknesses roughly and guide insulation installation correctly in his/her area of activity. He/she can outline and explain the so-called marker rule based on common Passive House details through free-hand drawing.	He/she is able to recognize and to communicate with other tradespeople in technically correct language about the importance of thermal insulation to avoid passive house error and guide other people in the correct installation of thermal insulation.

2.2 Air and wind tightness:

He/she can describe the consequences of insufficient air-tightness, using the collegiate rule and the Blower Door method for measuring airtightness. He/she is able to assess the correct installation of airtightness levels and to interpret the results of air tightness tests.	He/she can explain the eight types of insufficient airtightness. He/she can describe the so-called pen rule and the Blower Door method for measuring airtightness and designate the three sub-standard limits for uncontrolled air exchange in various types of buildings.	He/she can prepare BlowerDoor measurements, explain the measuring principle and calculate the permitted building volume for a given maximum leakage value.	He/she is able to assess the correct installation of airtightness levels and able to interpret the results of an airtightness test. He/she can identify existing leaks and arrange for necessary repairs.

2.3 Heat bridges:

He/she can explain the different types of thermal bridges, their effects and the rules for their minimization. He/she can identify defective versions on the site and propose appropriate measures to avoid or minimize their effects.	He/she can explain the four types of thermal bridges, and the six effects and four rules for their minimization. He/she can explain the "PSI value" and knows to what degree this value is negligible. He/-she can describe the use of dew point tables.	He/she can outline the four types of thermal bridges based on standard details. He/she can describe at least two different solutions for the thermal bridges connecting balcony slabs.	He/she can identify in terms of thermal bridges defective versions on the site and propose appropriate measures to avoid or minimize them.

2.4 Windows, doors and sun protection:

He/she knows the heat-technical characteristics, terms and effects of standard and passive house windows. He/she can explain the basics of structurally correct and standardized installation of windows, doors and light management systems to other people.	He/she knows the four tasks of transparent building shells and can explain the thermal and technical characteristics and effects of standard and passive house windows. He/she can describe the terms insulation, total energy transmittance, light transmittance and light reflectance of windows. He/she can name the different window materials and solar protection systems and normative installation directives.	He/she can the necessary preparatory work and the technically correct and standardized installation of windows, doors, window sills and sun protection systems explain in wood and solid walls. He/she can analyze and explain the advantages and disadvantages of incorporation in the soffit or in the insulation layer. He/she can calculate the U-value of windows when installed.	He/she can guide others in selecting and installing structurally correct windows, doors and sun protection systems, and monitor and clarify the construction process under the trades involved.

2.5 Details & Examples:

He/she can explain typical PH details from the foundation to the roof ridge, and quote selected examples of wood and solid construction with flat and pitched roofs as well as their interaction within different construction trades.	He/she can present different examples of floorboards and bulk and panel insulations, different connections of exterior walls to foundations, floor slabs and roof structures, component bushings, underground cables and earthing. He/She can explain the difference between roof waterproofing and roofing, the proper principles of flat and pitched roof structures in wood, and massive construction.	He/she can consider the basic building construction technical requirements for passive houses in preparation for technical building installations.	He/she can report on built and personally visited examples of certified passive houses in wood, solid and composite construction and compare and evaluate correct and incorrect construction designs based on photos or on-site observations.

3) Building Technology

3.1 Basics:

He/she can explain the structural and internal physiological demands on the building and describe the specific requirements for building services in the PH.	He/she can explain the eight main requirements for the building as well as the three special features in PH, assess the moisture absorption capacity of the air depending on the temperature and the fresh air and hot-water requirements. He/she knows the four basic principles of room	He/she can explain the problem and a building practice-proven solution for the smoke ventilation of elevator shafts in PH. He/she can describe ways to integrate photovoltaic and solar thermal systems for decentralized energy production and provide an outlook on the development of	He/she is able to communicate correctly to designers and others in the building trades about heating and hot water in passive or nearly zero-energy houses, identify errors and propose solutions.

	cooling and may explain the overall energy balance in PH.	energy-plus building.	

3.2 Heating and hot water:

He/she knows the specific requirements and the most common heat source in PH and can describe the main types of biomass heating, outline the basic principles of domestic hot water, and assess system construction.	He/she knows the specific requirements and the most common heat source in PH, the operation and the main types of heat pumps, esp. Air-air and brine-water heat pumps and solar thermal and photovoltaic systems. He/she can assess the requirements, describe the main types of biomass heating and outline the basic principles of the domestic hot water & freshwater charging systems.	He/she can broadly evaluate building services of heating and hot water according to current normative and legal provisions.	He/she is able to identify a technically correct position to communicate to designers and others in the building trades about heating and hot water in passive or zero-energy houses when there is an error and propose solutions.

3.3 Heat input:

He/she can describe the main aspects of the heat input via the supply air and surface heating systems as well as the opportunities and types of (additional) radiators and judge the overall performance of the installed systems.	He/she can describe the four most important aspects of the heat input via the supply air as well as the three types and four main advantages of surface heating systems and explain the options and types of (additional) radiators. He/she knows the requirements for installation of (reference) room sensors.	He/she can assess structural preparations for heat delivery systems such as floor and wall heaters for compliance with current standards and legal provisions.	He/she is able to communicate with designers and building trades in a technically correct fashion about heating and hot water in a passive house, and to identify errors and propose solutions.

3.4 Residential ventilation:

Knows the requirements and components of domestic ventilation systems in PH, can calculate the required amount of air per person and the cross section of overflow and is able to communicate in a technically correct fashion with designers and others in the building trades.	He/she knows the six requirements for residential ventilation systems (WRL) and the four types of air. He/she knows the structure and components of WRL and the five types of antifreeze heaters describe and their uses. He/she can explain air heat exchangers,	He/She can provide additional services for residential ventilation systems such as geothermal heat exchangers, pipe linings, bushings and the like. He/she can calculate the required amount of air per person and the cross section of overflow in door panels.	He/she is able to communicate with designers and others in the building trades in a technically correct fashion about heating and hot water in a passive house, and able to identify errors and propose solutions.

	ground heat exchangers and brine heat exchangers, as well as folded spiral, flat duct and PE hose systems including the corresponding components for air distribution, heat, sound, and maintenance.		

3.5 Sanitary and electrical installations:

He/she knows the requirements for installations in PH and can produce air-tight building envelopes in the field of plumbing and electrical instal-lation, and identify errors and propose solutions.	He/she can execute airtight plumbing and electrical installation, and install tube diffusers including airtight penetrations through the building envelope. He/she can describe the measures to minimize hot water distribution losses.	He/she can assess the airtightness in line guides in the outer walls and professional penetrations through the building envelope.	He/she is able to communicate with designers and others in the building trades in a technically correct fashion about heating and hot water in a passive house, and able to identify errors and propose solutions.

4) Renovation

4.1 Basics:

He/she knows the conditions for comprehensive thermal - energetic renovation of existing buildings and can plan the necessary steps correctly.	He/she knows the benefits, different measures and approaches to thermal and energy renovation of existing buildings. He/she knows individual evaluation systems for thermal energy rehabilitation and the necessary planning steps for the comprehensive renovation of a building.	He/she can list advantages of thermal and energy renovation from a public and private perspective and describe different measures of thermal and energy renovation. He/she can list the requirements of a renovation to a passive house standard and present the main features of the restructuring concepts. He/she can apply individual evaluation systems for thermal and energy renovation to old buildings and explain the steps for the comprehensive renovation of a building.	He/she is able to weigh the actions and consequences of thermal and energy renovation. He/she is able to correctly evaluate different measures of thermal and energy renovation and to assess the needs of a renovation to passive house standards technically and economically. He/she is able to judge a redevelopment for different achievable energy levels and to compare individual evaluation systems for thermal and energy renovation of old buildings. He/she is able to evaluate the situation, restructuring plans and planning steps for the comprehensive renovation of a building.

4.2 Building condition analysis:

He/she is able to assess the results of a building condition assessment and describe problem areas. He/she can ascertain the state of construction of a building using a checklist and evaluate individual aspects.	He/she knows the most important steps and the proper procedure for a building condition assessment. He/she knows the importance of building condition analysis as a prerequisite for extensive refurbishment. He/she is familiar with the use of checklists in order to understand the state of construction of a building.	He/she can apply the most important steps of a building condition assessment and use checklists to assess the state of construction of a building. He/she can respond to and recognize structural damage properly.	He/she is able to apply the most important steps of a building condition assessment and describe problem areas. He/she can explain why the building condition analysis is an important prerequisite for extensive refurbishment. He/she can ascertain the state of construction of a building using a checklist and evaluate individual aspects. He/she is able to assess a building condition assessment as to its completeness and validity.

4.3 Building envelope:

He/she can assess the appropriate measures for the thermal renovation of the bottom plate and the basement ceiling, roof and top floor ceiling, exterior walls using EIFS, curtain wall and interior insulation, and windows and doors and execute these measures properly and professionally.	He/she knows the characteristics of the most common insulation products for thermal insulation. He/she knows measures for the thermal renovation of the bottom plate and the basement ceiling, exterior walls using EIFS, curtain walls and interior insulation. He/ she knows measures for the thermal renovation of the roof and the top floor ceiling and windows and doors.	He/she can properly install insulation products for thermal insulation of the building envelope. He/she can apply measures for the thermal renovation of the bottom plate and basement ceiling properly. He/she can apply measures for thermal rehabilitation of exterior walls by EIFS, curtain walls and interior insulation properly. He/ she can apply measures for the thermal renovation of the roof and the top floor ceiling and windows and doors properly.	He/she is able to assess products for thermal insulation of components and select the correct option. He/she is able to evaluate measures for the thermal renovation of the bottom plate and the basement ceiling with regard to their proper execution and possible impact on the situation. He/she is able to assess measures for thermal renovation of exterior walls, curtain walls and interior insulation by EIFS with respect to their proper execution and possible impacts. He/she is able to evaluate the situation, measures for the thermal renovation of roof, top floor ceiling, windows and doors with regard to their proper execution and possible impact.

4.4 Building technology:

He/she can evaluate heating requirements properly. He/she can evaluate systems for heat generation and its applications in the building renovation. He/she can assess the benefits and limitations of ventilation systems with heat recovery in the building renovation.	He/she knows efficient systems for heat production, heat distribution and hot water supply. He/she knows current methods for estimating the heat demand and the reduction of heat losses in the heating system. He/she knows efficient systems of centralized and decentralized ventilation systems with heat recovery and the hygienically required minimum air quantity. He/she knows the principle and the application possibilities of solar thermal systems and photovoltaic systems in the course of building renovations.	He/she can describe efficient systems for heat production, heat distribution and hot water supply. He/she can apply common methods for estimating the heating requirement and suggest ways to reduce heat losses in the heating system. He/she can describe centralized and decentralized ventilation systems with heat recovery and assess hygienically required minimum air quantity. He/she can explain the principle and applications of thermal solar and photovoltaic systems in the course of building renovations.	He/she is able to determine the effects of thermal renovation on buildings to reduce heat consumption. He/she is able to select capable systems for heat production, heat distribution and hot water supply. He/she is in a position to implement common methods for estimating the demand for heating and compare options for the reduction of heat losses in the heating system and to judge the best option. He/she is able to compare centralized and decentralized ventilation systems with heat recovery, specify hygienically required minimum air quantity, and estimate the consequential requirements properly. He/she is able to assess the applications of solar thermal and photovoltaic systems in the course of building renovations.