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Project "Prefconstruction"

Course syllabus

Course title: "Conducting and implementing construction of houses implemented in wooden skeleton technology using renewable energy sources"

1.	Course title	Conducting and implementing construction of houses implemented in wooden skeleton technology with the use of renewable energy sources
2.	Author	Marzena Choińska
3.	Course info	Blended form (online and practical classes) Trainer: Marzena Choińska Deadline: January - March 2020 Number of hours: 54 12 hours online 42 hours of practical classes 2 hours course validation Course form: mixed (online and practical) The condition of passing the course is participation in all scored activities and passing all tests.
4.	Course description	The course of the construction of wooden frame houses focuses on the use of prefabrication, which allows the full production of house elements in the factory (full prefabrication) and understanding of many issues and problems occurring in the design of buildings at this stage and in this form of construction. Design and construction of skeletal buildings will be enriched with the possibility of using various types of renewable energy in them, such as heat pumps or solar panels. Participants will be trained in skeletal construction technology and will be introduced to innovative solutions in house construction. The aim of the course is to learn new technology in construction in a new and creative way.

		<p>As part of the course, participants will learn about the technology and enterprise related to the construction of prefabricated wooden frame houses, using renewable energy sources. The process of complete prefabrication of the finished house from the moment of creating building elements in the factory to complete assembly on the construction site will be discussed. Participation in the course of 22 vocational school teachers from Lithuania, Poland and Latvia will allow them to gain specific practical knowledge of prefabrication in skeletal construction and subsequent competitive education, giving students specific qualifications required by employers.</p>
5.	The goals of the course	<p>Main objectives:</p> <p>Acquiring basic knowledge in the field of technology used in frame construction and incorporating new solutions used in the prefabrication of buildings with renewable energy sources into vocational training.</p> <p>Specific objectives:</p> <p>During the course, the participant:</p> <ul style="list-style-type: none"> - Will acquire knowledge, skills, learn the necessary techniques to prepare vocational training classes in the construction industry (skeletal construction). - Familiarize with the use of tools and basic instruments used in frame construction, thanks to which it can introduce innovations to individual stages of prefabrication of frame houses.

6.	The form of the course	<p>The theoretical part will be on-line using an educational platform designed exclusively for this course. The platform will contain a lot of different materials, which will allow participants to learn about the latest terminology of skeletal construction, as well as various methods of prefabrication of houses in wooden skeleton technology.</p> <p>The media used during virtual classes will be: communication tools (chat, forum, e-mail, voting, webinars), educational materials (dictionary, presentation, articles, videos), practical questions (exam and / or test).</p> <p>The content of each module will form a whole and must be developed in the correct order. Practical tasks will allow the participant to acquire skills in using ICT tools.</p> <p>Mandatory tasks will be scored according to the correctness of the completed task.</p> <p>The practical part will be developed in workshops designed to use new technologies for the prefabrication of wooden houses in frame construction.</p>
7.	Content of on line education	<p>Block I - Definition of a prefabricated house</p> <p>TOPICS:</p> <ol style="list-style-type: none"> 1. Full prefabrication. 2. Open prefabrication. 3. Materials and tools used during house construction. 4. Insulation of buildings in skeleton structure. 5. Building design. 6. Frame facades of houses. <p>Block II - Prefabrication of houses using renewable energy</p> <ol style="list-style-type: none"> 1. Preparation of the house structure. 2. Installation of the house structure. 2. Types of home insulation. 3. Joinery assembly. 4. Types of renewable energy sources. 5. The use of renewable energy sources in skeletal houses.

8.	Content of practical education	<p>Block I - Technical and assembly requirements for wooden construction - Exercises at Danwood</p> <ul style="list-style-type: none"> - Security training - Materials used in wooden construction, - foundation of buildings, - building construction, - Sheathing of ceilings, walls and roof, - External protection of the building against moisture and air penetration, - Thermal insulation of external partitions, - sound insulation, - building ventilation, - facade works, - Fire safety, - Control and acceptance of works, - Discussion panel with employees of the Recruitment and Development Department. <p>Block II - Prefabrication of houses in wooden frame technology. Exercises for buildings.</p> <ul style="list-style-type: none"> - Structure assembly, - Installation of external sheathing, - Installation of thermal insulation, - Installation of inner sheathing, - Installation of window and door joinery, - Installation of external and internal window sills, - Installation of additional thermal insulation, - Exterior cladding - plaster or wooden cladding, - Construction of plasterboard bodies, - Filling, placing corners, - Wallpapering, - Cladding works - laying panels, laying tiles, - Shower assembly, - Bathtub assembly and installation. <p>Block III - Renewable energy sources in skeletal construction. Case study</p> <ul style="list-style-type: none"> - Energy sources and their assembly, - Example installations in skeletal buildings.
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9.	Term and time of course	<p>Theoretical course online from 15/12/2019 - 15/01/2020</p> <p>Practical course at the headquarters of construction companies (at the Polish partner of the RCK, Białystok) from 20/01/2020 to 27/01/2020</p>
10.	Essential demands	<p>Participants should be able to use the computer and the Internet with ease:</p> <ul style="list-style-type: none"> - Know how to use the computer in terms of operating system, e-mail, communicators, e-learning platform, etc. - Reading comprehension - Carry out the exercises and test on line.
11.	Technical demands	<p>In the website of the course will be do the technical requests and the freeware essential to use the materials of the course, such as:</p> <ul style="list-style-type: none"> -Adobe Acrobat -https://get.adobe.com/pl/reader/ -Webbrowser recommended – Chrome
12.	The rules of participation	<ul style="list-style-type: none"> - Have passed previous training online course. - Correct dress code -(working clothes for the building, working footwear)
13.	System of completion	<p>In order to complete the course – the participant has to follow the on line block, ending with the test, and attend the the practical part in Białystok</p>
14.	Sources	<p>Internet sources – websites, youtube videos, articles, dictionaries.</p>

SCHEDULE

ONLINE formation (THEORETICAL PART)

TERM	SUBJECT	CONTENT
6 hours	BLOCK 1	Definition of a prefabricated house.
6 hours	BLOCK 2	Prefabrication of houses using renewable energy.

Practical formation (PRACTICAL PART)

TERM	SUBJECT	CONTENT
12 hours	BLOCK 1	Technical and assembly requirements for wooden construction - Exercises at Danwood.
18 hours	BLOCK 2	Prefabrication of houses in wooden frame technology. Exercises for buildings.
12 hours	BLOCK 3	Renewable energy sources in skeletal construction. Case study.

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