Funded by the Erasmus+ Programme of the European Union

LUND UNIVERSITY

TALTECH

Project implementation result

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Presented By:
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МОНГОЛ УЛСЫН ШИНЖЛЭХ УХААН ТЕХНОЛОГИЙН ИХ СУРГУУЛЬ
MONGOLIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

ХААИС
MONGOLIAN STATE UNIVERSITY OF AGRICULTURE

GMIT
МОНГОЛ-ГЕРМАНЫ ХАМТАРСАН АШИГТ МАЛТМАЛ ТЕХНОЛОГИЙН ИХ СУРГУУЛЬ

Activities

Work packages and activities carried out by MUST

- WP 1. Survey
- WP 2. Development of courses
- WP 3. Quality assurance
- WP 4. Dissemination and exploitation
- WP 5. Management

WP 1. Survey

Odjective

- To identify labor market demand on skills of the engineers and architect
- To identify opinion about courses that shall be developed and updated

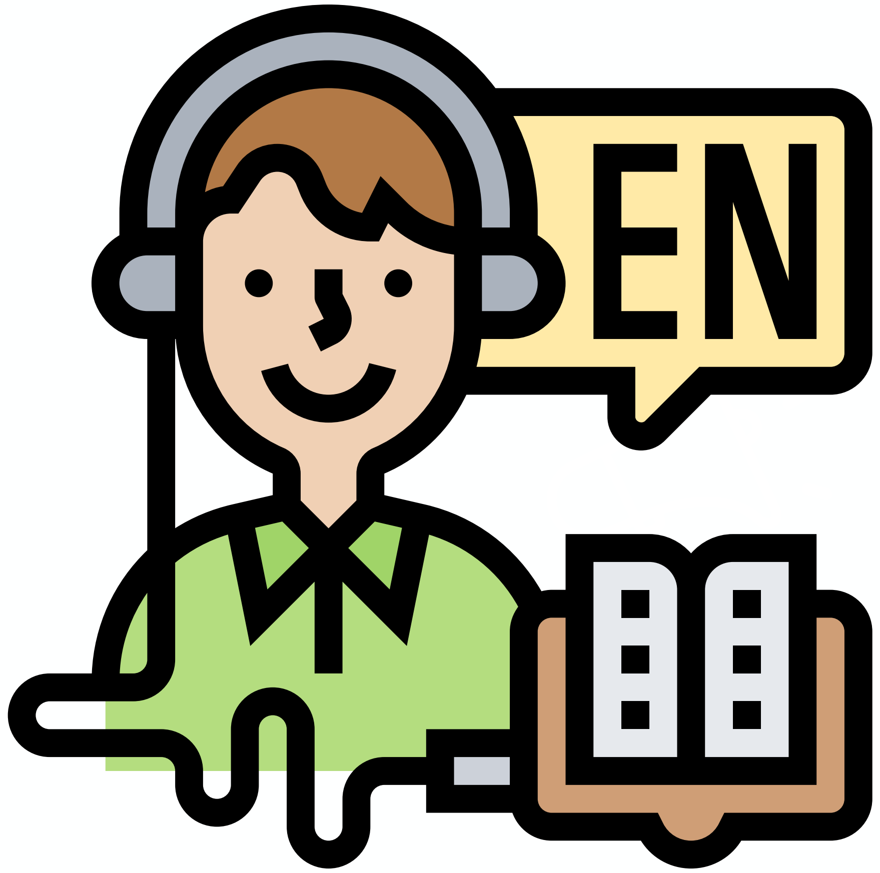
Participant

87 respondents of 32 organizations

- Government org
- NGO
- Donor org
- Private companies

Result

- Staff having knowledge about energy efficiency and renewable energy is demanded in the labor market
- Importance of the capacity development training for engineers
- Companies wish to hire more knowledgeable graduates on specific topics as ***energy efficiency, renewable energy, energy modelling*** etc
- Identified need of course development and update to meet employees' demand with skillful engineers



English course for teachers

GMIT (instructor)

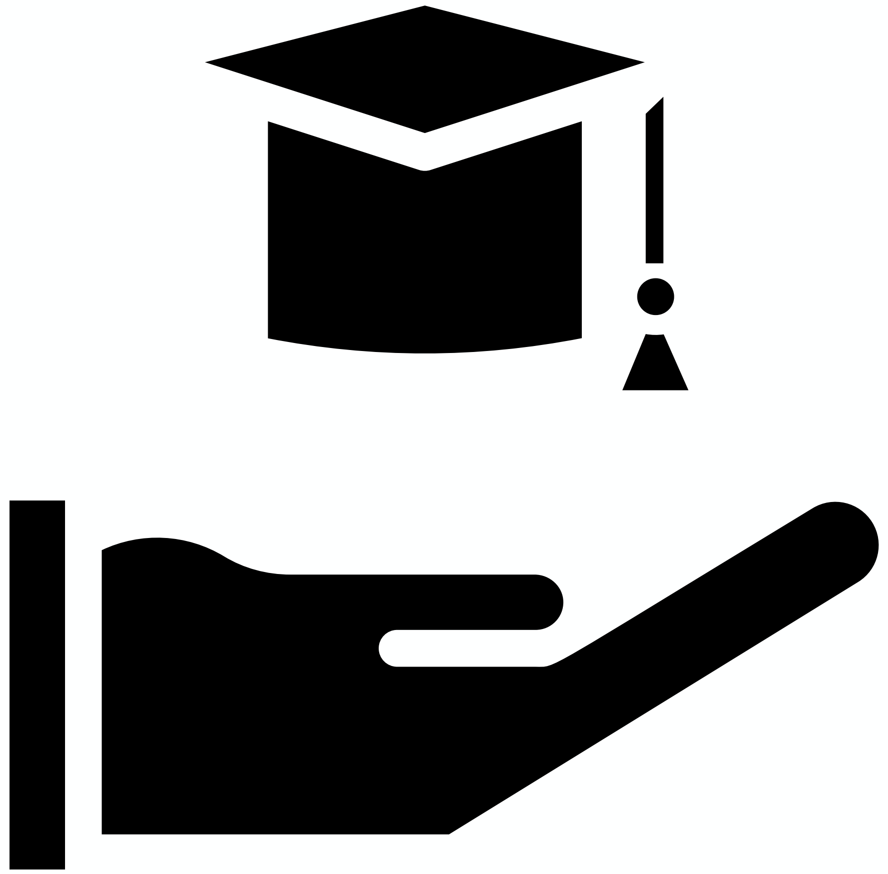
Dr. Ariunbolor Purevee conducted

MUST

6 staff attended
- 5 teachers
- 1 assistant

MULS

.... staff attended



WP 2. Development of courses

Undergraduate study (Update)

1. A.WHE 318 District heating network
2. A.WHE 361 Heating ventilation and air conditioning system controlling, automation
3. A.WHE 383 Renewable energy planning in buildings

Graduate study (Development)

1. A.WHE 788 Application of solar energy in buildings
2. A.WHE 789 Programming and simulating with MATLAB

Compulsory

Elective

Facilities

Courses	*Textbooks*	*Lab*	*Trainer set*
District heating network	• **1 book procured**	**Established newly**	**Heat pump trainer set**
HVAC system controlling and automation	• **2 books procured**	**Established newly**	**HVAC control trainer set**
Renewable energy planning in buildings	• **2 books procured**	**Established newly**	**Renewable energy trainer set**
Application of solar energy in buildings	• **2 books procured**	**Established newly**	**Renewable energy trainer set**
Programming and simulating with MATLAB	• **3 books procured**	**Established newly**	**5 computers with MATLAB software**

Equipment plan and procurement

Equipments	*Plan*	**Procured**	*Note*
Textbook	10-15	10	Achieved
PC with MATLAB software	5-10/25-30	5/10	5 licenses given to other departments for research purpose
Renewable energy trainer set	1	1	Achieved
Heat pump trainer set	1	1	Achieved
HVAC control set	1	1	Achieved
Testo (pressure meter, sound meter, light meter)	1+1+1	0	No budget
Environmental test meter	1	0	No budget

WP 2. Development of courses

Courses	Number of students	
	2022-2023 Spring semester	2023-2024 Fall semester
District heating network (bachelor)	NA	13
Renewable energy Planning in buildings (bachelor)	17	not known
Heating ventilation and air conditioning system control and automation (bachelor)	22	11
Application of solar energy in buildings (master)	4	not known
Programming and simulating with MATLAB (master)	3	not known

WP 2. Curriculum inclusion into the major programs

Courses	Curriculum inclusion from 2024	
	Undergraduate	Graduate
District heating network (bachelor)	HVAC Sanitary engineering	
Renewable energy planning in buildings (bachelor)	HVAC Sanitary engineering	
Heating ventilation and air conditioning system control and automation (bachelor)	HVAC Sanitary engineering	
Application of solar energy in buildings (master)		Environmental engineering department 4 profession Architectural department 2 profession
Programming and simulating with MATLAB (master)		All the professions of departments of School of Civil Engineering and Architecture

Number of trained staff in Tallinn

Bilguun Buyantogtokh

Solar application course instructor

Davaatseren Jigmed

Matlab instructor

Erdenetsetseg Dashdavaa

Instructor of updated courses

Number of trained students in Lund

Narantsatsral Chuluunbaatar

Graduate student

Sainsanaa Zorig

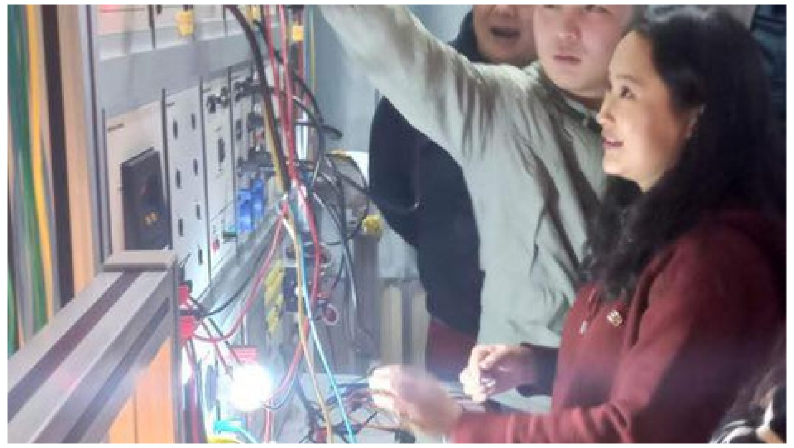
4th grade student of HVAC

Bilguun Byambadorj

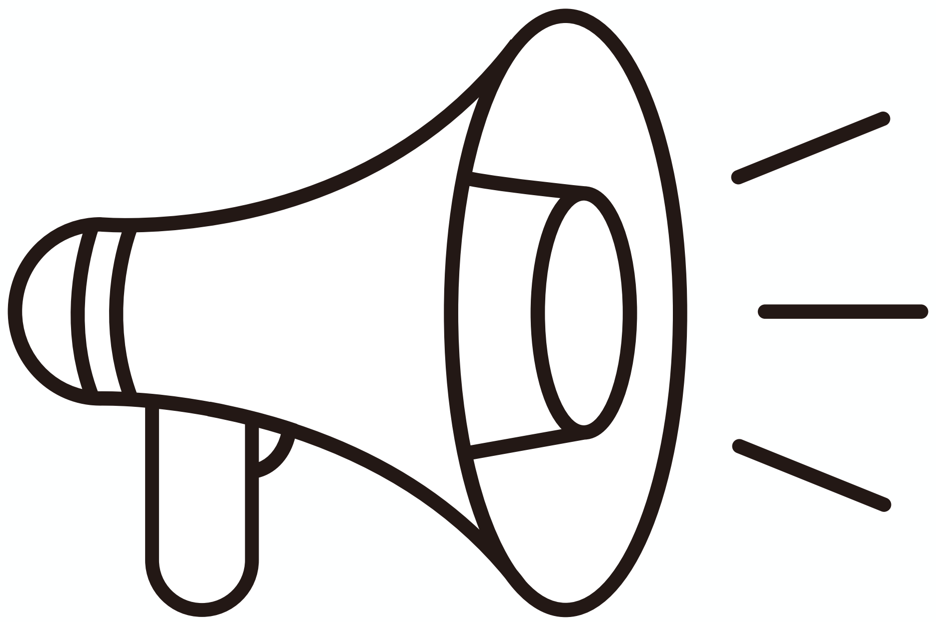
3rd grade student of HVAC

Short term training for engineers

- 5 days training conducted 09.01.23 to 13.01.23
- Total 20 engineers participated (12 men, 8 women)
- End of the training professional development course certificate was provided.
- Topics taught by project implementing staffs
  a. *IAQ requirement, assessment*
  b. *Thermal camera assessment*
  c. *Building thermal performance*
  d. *Ventilation system for the buildings*
  e. *Renewable energy use for the building*
  f. *HVAC system automation*
  g. *AC system design and operation*
  h. *Others*

Dissemination and exploitation



To public
- WEB page created under the school web
- All the activities information are placed

To engineers
- During the annual conference project information was given
- Students showed lab works
- Introduced lab stations in the conference hall
- Distributed project brochure

To other EU projects, public
- Participated EU open days activity with other universities
- Distributed project brochure

To university administration
- Project activities introduced during the lab openning ceremonies
- Lab establishment was included in the annual report of school dean and introduced all the staff

To university students
- Students trained in Lund university reported result of their study among the lecturers and students

Key Performance Indicators achievement

100%

WP 1

Completed fully

90%

WP 2

- Digital class will be developed for one course "District heating network"

90 %

WP 3

- Course evaluations will be done
- Approved curriculums will be submitted

80%

WP 4

- Closing meeting will be organized
- Reporting

Thank you!