

Project: Euro-Mongolian Cooperation for Modernisation of Engineering Education

Minutes of the 3d meeting

Friday 29, March 2019

Philippe Malbranche, Director of INES

Welcome remark. Presentation of INES research activities. He presented the International solar alliance with 73 countries and in details, the research activities and results at INES.

Questions of Mongolian partners on the planning, efficiency, business models were replied.



Discussion on the courses and expertise that INES can provide to the Mongolian universities to meet the needs of the industry and education according to the need analysis results. Following topics are proposed by Magali Roue:

- Introduction to solar resource
- Photovoltaic technologies + simulation of PV (Autocal sol software)
- Energy efficiency: insulation, air tightness
- Positive energy building
- Solar thermal

Discussion on the courses that the Mogolian partners need for their curricula from INES can propose. They asked for simulation of PV. There is one free developed by INES - Autocal sol software

Saturday 30, March 2019

9:30 Training of Mongolian teachers in solar energy, electrical and thermal management



14:00 Training of Mongolian teachers in energy efficiency of buildings

After a presentation by Philippe Malbranche, a demonstration and results of tests were presented on the four experimental houses at INES. They have been constructed with the same construction but with different isolation.

Monday 1, April 2019

Franc Barruel, Director INES Formation

Welcome remark

Slavka Tzanova, Project co-ordinator, TUS

Introduced the new partners from Politecnico di Torino who is formally project partner since January 2019.

Review of implementation of tasks from the ToDo list from the previous meeting in Mongolia.

Decision about the courses or expertise and some learning materials to be provided by the EU partners – to develop courses on topics from the new curricula of Mongolian universities which are already accredited by the national authorities.
Deadline: 08 April 2019

Dr. Uganbayar, Project Manager of MUST and representative from Mongolian partners

Curriculum of MUST: “Technology process and Automation”

Importance of this project for modernization Mongolian education, new approach – need analysis, curricula.

MUST is developing as a research University.

Presentation of syllabi of their courses for the curriculum “Technology process and Automation”:

- Research methodology in engineering (TUB can contribute)
- Patent study
- Modelling for engineering students (statistics for research data)
- Advanced course of PLC and microprocessor technique
- Control and data acquisition system- to add some laboratory practice
- Computer based control systems, data transmission
- Theory of digital automation
- Digital filter design (TUS might support)
- Automatic control for industrial process and modelling
- Digital electronic design (VHDL – TUS)
- Industrial robots and manipulators (To ask if colleagues may help)
- Advanced course on power electronics
- Instrumentation, control and measurement

Most of the courses – will be taught in blended mode. The students should read some materials in advance and then to discuss the content during the face-to-face sessions

14:00 Visit of the CEA laboratories for fabrication of photovoltaic, and PV systems



15:00 Presentation of curriculum of NUM, peer review of learning outcomes and syllabi

Dr. Lodoiravsal Choimaa - NUM

After the need analysis they developed the final curriculum accredited by the on 18 June 2018

Curriculum: Electronics

- Research methodology in engineering (TUB can contribute)
- Analog circuit design
- Digital systems analysis and design

The above 3 courses are old courses

- CMOS VLSI design (TUS)
- Solid state electronics (maybe TUS)
- Control systems
- Image processing and pattern recognition
- 3D display
- Artificial intelligence and machine learning (2 departments are developing the course) – multidisciplinary
- Safety engineering

Peer review of learning outcomes and syllabi was done. The learning outcomes for some courses are only for knowledge. There should be also for skills and competences.

Tuesday 2, April 2019

9.30 Presentation of curriculum of NTU, peer review of learning outcomes and syllabi

Altanchimeg, teacher at NTU

- Curriculum “Power supply” MSc degree
- Use new resource of energy in power supply (Polito will support)
- Techniques to determine losses of electric supply system
- Specific course of electrical machinery (Polito will support)
- Calculation of the electrical energy supply. Algorithm and programme
- Electric energy quality and application mode
- Nanotechnology, material science

- Specific course of electric supply

After the peer review it was suggested to write the syllabi in the common template for the project and to precise some learning outcomes

Magali Roue, INES

Presentation of activities at INES Formation. Main Objective is dissemination of knowledge in renewable energies and training industrials and PhD students from the region and France. She presented their e-learning platform and one e-learning course on solar energy and its use that has been already developed for the project with a focus on Mongolia.



The other courses by INES were discussed on Friday.

TUS is developing the courses on nanomaterials, VHDL and VLSI design.

TUB – on research methods and power electronics

Polito – on the use new resource of energy in power supply and on electrical machinery

In Mongolian universities the open source software Open edX is used for e-learning materials development. A decision was taken to select it as a common software for the three curricula.

Dissemination

Dissemination to provincial universities in Mongolia, training workshops for the approach with need analysis, learning outcomes.

17:00 ToDo list and planning the next meeting

Slavka Tzanova, TUS

Detailed explanation of financial reporting. Examples for documents to be presented and how to fill in the excel table.

All three universities have finished the tendering procedure and will buy the equipment before 14 April 2019.

To Do list:

- To provide copies of the documents from accreditation of curricula with translation in English - 10.04.2019
- To provide syllabi and learning outcomes in the form accepted for all courses - 10.04.2019
- EU partners – to contribute to at least two-three courses - 11.04.2019
- To install and test Open edX – 30 June 2019
- Each partner - to create a web page on the server of the university in the local language – 11.04.2019
- Partners from EU to send the syllabi of courses they can provide to the Mongolian partners - 11.04.2019
- To change the courses/curricula in the leaflet and to send it to the partners for translation - Slavka 05.04.2019
- To translate the leaflet in all partners' languages 11.04.2019
- To write the draft of the project report and to send it to the partners for their contribution – 08/04/2019
- Next meeting 28 June – 5 July in Ulaanbaatar
- To send to Slavka the presentations from the meeting
- To make a site in Facebook and other social media – 11 April
- Sustainability plan and financial statement, QA and dissemination - Elena to give to Slavka
- Sustainability: MUST –plan for professional gradual school for sustainable energy – to be sent to Slavka – 08/04/2019
- To send to Slavka the financial reporting table with all financial reporting documents – 10/04/2019
- To send information and materials (photos, presentations etc.) for dissemination done – 10/04/2019

- To transfer to the partners from NUM, MUST and NTU the second instalment to pay the equipment – 08/04/2019

***Next meeting on syllabi evaluation and training seminar for Mongolian teachers:
Ulaabaatar, Mongolia, 28 June – 5 July 2019 (depending on the flights
availability)***

