

UNET Workshop 4

University Network on PhD Programs in Energy Technology

UNET Erasmus+ project

Time: Monday 3 October - Wednesday 5 October, 2022
Place: USGM, Rome, Italy. Via Paolo Emilio, 29 – Rome, Italy
Organizer: USGM – Università degli Studi Guglielmo Marconi
Host: NTNU, Dept of Energy and Process Engineering and NTNU Energy

Report: Ole Jorgen Nydal, Mulu Bayray, Jimmy Chaciga, Karidewa Nyeinga, Abdulkadir Aman

Workshop 4

This is Workshop number 4 out of the total of 6 planned Workshops in the UNET project period. Workshop 1 (hosted by UDSM in Tanzania) was on preparation, Workshop 2 (hosted by UDSM in Tanzania) and Workshop 4 (hosted by NTNU in Norway) and the current Workshop 4 are on the development. The two remaining Workshops will be on the implementation. The current Workshop 4 covers short project status, preparation for the mid-term reporting and introduction to on-line teaching methods from USGM.

Agenda

Time	Chair	
		Monday 3 October
09:30	USGM	Welcome
Morning	NTNU	Updating on UNET deliverables and status WP 2 (AAU) Course Catalogue WP 3 (MAK) Training Nodes WP 4 (UEM) Implementation
13:00-14:00	<i>Lunch</i>	
Afternoon	NTNU	Preparation of the the mid-term report
		Tuesday 4 October
Morning	USGM	Presentation of USGM Research activity and projects Visit to the Energy Laboratory
Afternoon	USGM	Rome Centre guided tour
		Wednesday 5 October
Morning	USGM	Online Teaching Methods USGM Training
Afternoon	USGM	Visit to USGM recording studios UNET promotional video recording
	NTNU	Summary

Attendance

The attendants for the Workshop 4 are listed in the table

NTNU	Norwegian University of Science and Technology, Norway
USGM	Università degli Studi Guglielmo Marconi, Italy
UDSM	University of Dar es Salaam, Tanzania
MAK	Makerere University, Uganda
UEM	University of Eudardo Mondlane, Mozambique
AAU	Addis Ababa University, Ethiopia
UDOM	Dodoma University, Tanzania (on line)
BU	Busitema University, Uganda
UniSAVE	Universidade Save, Mozambique

The attendance of the UNET Workshop4 is given in below.

Name	Partner	Country
Sara Cella	USGM	Italy
Matteo Martini	USGM	Italy
Alessandra Pezzati	USGM	Italy
OJ Nydal	NTNU	Norway
Torbjorn Nielsen	NTNU	Norway
Tonje Kotte Fredriksen	NTNU	Norway
Ida Kristin Antonsen	NTNU	Norway
Qiaoqiao Wang	NTNU	Norway
Boaventura Cuamba	UEM	Mozambique
Tomas Nhabetse	UNISave/UEM Mozambique	Mozambique
Antonio Leao	UEM Mozambique	Mozambique
Cuthbert Z. M. Kimambo	UDSM	Tanzania
Joseph Kihedu	UDSM	Tanzania
Karidewa Nyeinga	MAK Uganda	Uganda
Denis Okello	MAK Uganda	Uganda
Jimmy Chaciga	MAK Uganda	Uganda
Abdulkadir Aman Hassen	AAU Ethiopia	Ethiopia
Kamil Dino Adem	AAU Ethiopia	Ethiopia

Summary of workshop

Welcome

The Workshop was opened by welcoming remarks from Sara Cella, UGSM. Sara outlined the agenda for the three and gave a short overview of USGM.

Ole Nydal reminded us on the three major aspects of UNET: the preparation of the PhD Course Catalogue, improving the Training Nodes and the Implementation part. The Workshops covers a review of the courses, a review of the procurement of equipment and preparations for the implementation part.

WP2 Joint PhD Course Catalogue

AAU is the WP2 Lead, and Abdulkadir Aman presented the status on the courses to established. 15 Course Descriptions have been formulated and uploaded to TEAMS. The format for the course descriptions were harmonized during the Workshop3. A Google Form has been established for all the Course Coordinators to verify that the format is followed in the course descriptions. 10 have responded and the remaining will complete shortly, the missing points were essentially information on the teaching methods.

Each course has a Coordinator and a Working Group with members from several partner universities. Abdulkadir noted that the communication between the members of the Working Group was rather weak, and that much of the work on the course descriptions were made by the partner university being responsible for the course. Collaboration during Workshops are excellent and efficient, but becomes slower when conducted by e-communication. This was also noted by Joseph Kihedu, from the experiences in WP1.

OJ Nydal commented that the most important is the final results, that the courses develop well. Cross partner contributions pose good opportunities but is clearly more difficult to achieve by on-line means only. That is also a reason why emphasis has been put on conducting several joint Workshops in UNET. A strong result is also that the courses will be shared between the partners.

Further actions

The Course Descriptions can be submitted for approval of the Internal Evaluation Board within a week after the Workshop.

WP4 Implementaton

UEM is the WP4 Lead and Boaventura Chuamba presented the status on the preparations for the implementation phase of UNET, where PhD students will be invited to evaluate selected courses.

Each Curriculum Partner will identify one course which can be offered for evaluation of PhD students during the implementation phase. The table shows the tentative selected courses, and the estimated number of students attending from the home university.

Partner	Course	Estimated number of students
UEM	Advanced Statistics	4
AAU	Advanced Power Generation	4
UDSM	Pumps and Hydro Turbines	2
MAK	Heat and Mass Transfer	2

If the courses can be made with on-line participation, they can be more open for cross-partner participation and with more students.

UNET includes mobility support for PhD students to make use of courses and training equipment at other universities.

Further actions

UEM will coordinate the implementation and evaluation phase of the test courses, in communication with the relevant Course Coordinators. This includes updating of

- Courses to be delivered, at best courses which are of a general nature to attract wider attendance
- List of PhD students for participation
- Plans for implementation including student mobilities at each Partner University, typically 4 students / 2 months each.

WP3 Equipment for Training Nodes

MAK is the WP3 Lead and Karidewa Nyeinga presented the status on the acquisition of equipment for improvement of the specialized Training Facilities at the Partner Universities.

MAK

Karidewa noted that funds are needed on the university account before procurements are cleared from the finance offices.

AAU

The case of AAU is mainly workstations and software licenses. The specifications of workstations computers were submitted to the procurement office and preparations are underway to release the bid announcement in local newspaper.

UEM

The list of equipment is presented for quotations from 3 companies. The companies also manage the tax issues.

UDSM

A request for tax waiver is submitted. A “Letter of Credit” most often serves as a guaranty of payment for the supplier.

The case of Mekelle University

The coordinator from Mekelle University (MU) is of the opinion that it is unlikely that MU will come on board with active UNET participation. The political situation in the country has not improved, the military conflict has on the contrary escalated again lately.

We have decided earlier that we wait until mid-term with actions regarding the MU part of UNET.

Preparation of mid-term report

The following documents needs to be submitted for the mid-term report:

- E form accessible through the platform (and the explanatory note how to fill it in on the website)
Actions: NTNU to make draft for evaluation
- Table of achieved results
Actions: WP Leads to fill in status comments for the planned activities (see Project Manual on TEAMS)
- Financial Statement
Actions: NTNU to ensure that partners submit their respective Financial Statement excel files to financial officer, Tonje.
- Declaration of honour

The on-line forms have been converted to Microsoft Word equivalent and posted on TEAMS. The partners can edit directly in the files on TEAMS.

Presentation of USGM Research activity and projects

Visit to the Energy Laboratory

USGM is involved in a number of international projects, in particular on the challenge of hydrogen generation from biomass and utilization through fuel cells. Advanced laboratory equipment is managed for this purpose.

The technical challenges were presented and discussed in detail by Prof. Enrico Bocci, together with general comments on strategies for the energy transition away from fossil fuels.

A particular question on strategies to be considered for the UNET partner universities in African countries were discussed. The general comments were:

One advised sequence of approach was 1) Technological solutions 2) Economic optimization and 3) Environmentally safe.

Another general advise was to not to embark on new, complex and costly endeavours (e.g. large scale hydrogen based solutions) but rather take limited steps building on the experiences gained.

Small steps can also constitute game changing solutions.

Rome Centre guided tour

The UNET group participated in a guided walking tour of the major historical sites in Rome, facilitated by USGM.

During the 3 hours walking tour, UNET group visited some points of interest in Rome such as the Vatican, Piazza Navona etc. Participants at the tour get to learn about history of the city, it also provides a social and relaxing atmosphere for all the colleagues.

Online Teaching Methods USGM Training

USGM is providing on-line education services, with a large number of courses being available.

Experiences and principles of the on-line methodology were presented by Prof. Matteo Martini. On-line teaching has potentials, but also pitfalls.



A case for demonstration was presented by Prof. Ernesto Grande. A course on rehabilitation of structural damages to buildings (typically historical buildings) was presented and discussed. USGM have good internal capacity for preparations of the required graphical material and animations.

Visit to USGM recording studios

The partners were guided through some rooms used for the video-lessons recording at USGM. They had the opportunity to exchange with a Professor recording and also with some technicians. One representative per partner has been involved in the recording of a promotional video of the project that will be used for dissemination purposes. USGM will take care of the post-production process