



UNET Workshop 5
University Network on PhD Programs in Energy Technology
UNET Erasmus+ project

Time: Monday 4 September –Thursday 7 September, 2023
Place: AAiT, Addis Ababa, Ethiopia. King George VI St, Addis Ababa, Ethiopia
Host: AAU – School of Mechanical and Industrial Engineering

Report: Abdulkadir Aman, Ole Jorgen Nydal

Workshop 5

This is Workshop number 5 in the UNET project period. The main objectives of the Workshop 5 is to meet and work jointly on the Joint PhD course Catalogue. The course descriptions are completed, and the Workshop concentrates on the course material.

Agenda

Time	Chair	
Monday 4 September		
09:30	AAU	Welcome
Morning	NTNU	Updating on UNET deliverables and status WP 2 (AAU) Course Catalogue WP 3 (MAK) Training Nodes WP 4 (UEM) Implementation
12:30-14:00	<i>Lunch</i>	
Afternoon 14:00 -17:00	AAU	Development of teaching and learning material
	Course coordinators	<i>Course Working Groups:</i> -Completion of the Upgraded teaching and Learning material for existing courses -Completion of Teaching and learning material for the new courses
Tuesday 5 September		
Morning 9:00 – 12:30	AAU	Development of teaching and learning material
	Course coordinators	<i>Course Working Groups:</i> -Completion of the Upgraded teaching and Learning material for existing courses -Completion of Teaching and learning material for the new courses
12:30-14:00	<i>Lunch</i>	
Afternoon 14:00 -15:00	AAU	Development of teaching and learning material
	Course coordinators	<i>Course Working Groups:</i> -Completion of the Upgraded teaching and Learning material for existing courses -Completion of Teaching and learning material for the new courses
15:00-17:00	AAU	Visit of AAiT laboratories /Science museum tour
Wednesday 6 September		
Morning 9:00-11:00	AAU	Joint PhD Course Material Completion
	Course coordinators	<i>Course Working Groups:</i> -Completion of the Upgraded teaching and Learning material for existing courses -Completion of Teaching and learning material for the new courses
11:00-12:30	NTNU/AAU	<i>Course Coordinators:</i> Summary and Status report on Teaching and learning material
12:30-14:00	<i>Lunch</i>	
Afternoon 14:00-17:00	AAU	Training on PhD mentorship (Best practices and Approaches will be shared among the network)
Evening	AAU	Dinner (place and time to be decided)
Thursday 7 September		
Morning 9:00 -10:00	NTNU/AAU	-Discussion on options for upload and sharing of course material on a common repository - Plan for initiating relevant accreditation process at each university
10:00 -11:00	MAK	<i>Plan for acquisition of equipment and sharing of laboratories</i>
11:00 -12:00	EMU	<i>Plan for implementation of results (mainly exchange of PhD students for implementation)</i>

12:00 -12:30	NTNU/ AAU	<i>Workshop Summary and Plan for Workshop 6</i>
12:30-14:00	<i>Lunch</i>	
Afternoon	NTNU/AAU	-Updates on ENET Progress in 2023 -Closing remarks by AAiT officials

Attendance

The attendants for the Workshop 5 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
UniSAVE	Universidade Save, Mozambique

S.No.	Name	Partner	Country
1.	Leonzio Donato	USGM	Italy
2.	Ole Jorgen Nydal	NTNU	Norway
3.	Boaventura Cuamba	UEM Mozambique	Mozambique
4.	Rogério José Uthui	UEM (Mozambique)	Mozambique
5.	Alberto Júlio Tsamba	UEM (Mozambique)	Mozambique
6.	Tomas Nhabetse	UNISave/UEM Mozambique	Mozambique
7.	Antonio Leao	UEM Mozambique	Mozambique
8.	Cuthbert Z. M. Kimambo	UDSM (Tanzania)	Tanzania
9.	Joseph Kihedu	UDSM (Tanzania)	Tanzania
10.	Abraham Kimangano Temu	UDSM (Tanzania)	Tanzania
11.	Karidewa Nyeinga	MAK(Uganda)	Uganda
12.	Denis Okello	MAK(Uganda)	Uganda
13.	Jimmy Chaciga	MAK(Uganda)	Uganda
14.	Abdulkadir Aman Hassen	AAU (Ethiopia)	Ethiopia
15.	Demiss Alemu Amibe	AAU (Ethiopia)	Ethiopia
16.	Yilma Tadesse Birhane	AAU (Ethiopia)	Ethiopia
17.	Wondwossen Bogale Eremed	AAU (Ethiopia)	Ethiopia
18.	Tilahun Nigussie	AAU (Ethiopia)	Ethiopia
19.	Mulualem Gebregiorgis	MU (Ethiopia)	Ethiopia
20.	Asfafaw Haileselassie Tesfay	MU (Ethiopia)	Ethiopia
21.	Gebremichael Tesfamariam	MU (Ethiopia)	Ethiopia

Summary of the Workshop

Welcome

The Workshop was opened by welcoming remarks by Dr. Araya Abera , Dean of School of Mechanical and Industrial Engineering at AAiT, and Dr. Shegaw Ahmed delegate of the Executive Director of AAiT.

Dr. Araya expressed his happiness in working with the group of universities from different regions and the schools readiness to support the activities of the project in his capacity. He welcomed the guests to Ethiopia and wished a successful workshop period. He also expressed the readiness of the school to extend the collaboration in such type of projects through staff and student exchange.

	
<p>Photo: Dr. Araya Abera, Dean of SMIE making opening speech</p>	<p>Photo: Dr. Shegaw Ahmed, Delegate of AAiT executive director giving welcoming guests and giving opening speech</p>

Dr. Shegaw in his part gave a short overview of AAiT, its schools and research centers with objective of highlighting the current research and academic activities in the institute. He expressed that AAiT is happy to involve in such network projects with experienced universities from Europe and Africa. He encouraged the team to keep on this network and extend the collaboration through student and staff exchange, joint research activities etc... He officially opened workshop five and wished a successful working period during the event.

Prof. Ole Jorgen, the main coordinator of the project in his part shared a short presentation to participants with the objective of presenting the projects activities to date and the expected deliverables during workshop 5.



Photo: Prof. Nydal presenting workshop 5 objectives

WP2 Joint PhD Course Catalogue

AAU is the WP2 Lead, and Abdulkadir Aman presented the status on the course developments. A common format has been established and verified in a Google Form for all the Course Coordinators. A harmonized course description is completed. The Course Catalogue description is approved by the Internal Evaluation Board (IEB). Some recommendations from the IEB may not be compatible with local regulations.



Photo: Dr. Abdulkadir, host of workshop 5 presenting on WP2

The plan is that each course shall deliver ppt slides. This is an important part which will be particularly useful for sharing.

Regarding the common format for the ppt files, the following was agreed:

Each course has the first page format in common – including the logos and some information on UNET.

The Course Catalogue will be flexible regarding inclusion of case studies, both regarding the content and the evaluation.

A working group was established during the workshop period to work on each course material, type of learning materials, case studies and project types. The discussions were efficient and each group finally presented the progress before the closing of the workshop.

Further actions

Teaching material is under development for most courses. Types of exercises to be included. Joint work during Workshops is efficient, and the discussion showed that another Workshop on the course material could be needed before the implementation Workshop in 2024.

WP6 (Mulu) will prepare a proposal for the ppt first page template for each course.

WP5 (Leo) will do the QA clearance.

The Course Catalogue should be completed after the next Workshop 6 (27 November 2023, MAK).

WP3 Training Nodes

MAK is the WP2 Lead, and Karidewa Nyeinga presented the status on the procurement of the equipment for the Training Nodes.

- AAiT has completed, workstations and software is in place.
- MAK is on track, most of the equipment was acquired in 2022, the remaining budget will be spent shortly.
- UDSM experience some challenges with the transition to a new accounting system. A consequence of this is that the procurement system is on hold. IT is expected to be operational from October again.
- UEM 20% has been procured earlier, now the regular procedure is active with advertisement for tenders. This is expected to be completed by end of September.
- MU is on board and requests fund transfer for the equipment budget.

Further actions

The highest risk of not reaching the procurement deadline at the end of the year is probably on UDSM, and the challenges with the transition to a new financial system. UDSM will work on the case, and notify early enough for others to make use of the equipment budget, should the procurement case at UDSM look to fail. .

WP4 Implementaton

UEM is the WP4 Lead, and Boaventura Cuamba gave a status on the plans for the implementation phase in 2024. This includes:

- Plans for the mobilities of PhDs for the Training Sites
- Plans for the PhD evaluation program of selected courses

UEM has tried to combine the two plans, such that the selected courses provided by a host are given at the time when the named students visit the Training Site of the host. It may be that a course will be digitally provided to involve more students from other partner universities.

Any changes to the approved plan should be dealt with via email exchange with the WP lead.

Further actions

The plans were discussed and approved (UDSM supplied the PhD names from UDSM after the Workshop). UEM has posted the plans on TEAMS.

Discussion on options for upload and sharing of course material on a common repository.

Until further notice, the existing TEAMS channels will be used as a common repository for the Course Catalogue.

Further actions

WP5 (Leo) will check if the Course Catalogue is expected to be publicly available.

Development of teaching and learning material

The bulk of the Workshop 5 was dedicated to joint work on material for the courses, moderated by AAiT. Several groups were formed targeting specific courses.

Visit of AAiT laboratories

AAiT gave a tour of the laboratories, and in particular the ones related to Energy Technology. PhDs at AAiT are involved in a number of applied projects, both computationally and experimentally. Specific cases were heat storage for injera frying, Photo Voltaic for milk processing and biogas systems.



Photo: Workshop 5 participants visiting PV setup at ENET PhD students Project site
The team also visited SMIE Workshop where different machineries for curving, drilling and welding are demonstrated including the casting center of the workshop. Mr. Heiredin, the head of SMIE workshop gave a toured introduction of the activities in the workshop which accommodate both undergraduate teaching facilities and research equipment for graduate students.



Photo: Workshop 5 participants visiting SMIE workshop

Science Museum tour

The group made an excursion to the extensive Science Museum in Addis Ababa. Several types of energy technology are on display, where water resources and hydro power has a particular strong focus, the new Nile dam is coming into operation.



Photo: UNET Workshop 5 Participants at Science Museum in Addis Ababa, Ethiopia

Special training event: Introduction to Arduino based data logger

Jimmy Chaciga (PhD MAK) presented work from Makerere University on the development of an Arduino based data logger. This is a low cost alternative to commercial data loggers, and can be assembled from a set of Arduino compatible shields. A report on the technology is available for all, with sufficient details for preparations of copies.

Special training event: Introduction to COMSOL multiphysics

Tito Achire (PhD MAK/UoJ) prepared a presentation on his experiences using COMSOL Multiphysics for thermal analysis of an oil based heat storage for cooking. The presentation was given by Karidewa and includes a step-by-step description of the input preparation for the case. As other PhDs are also using COMSOL, similar events will be arranged also in future workshops.

**Special training event: Training on PhD mentorship
(Best practices and Approaches for sharing among the network)**

Some general aspects of PhD supervision and mentorship was presented by Prof, Tesfaye Sisay Tessema Experiences from the partner universities were shared and the challenges are quite universal. Embarking on a PhD study is challenging and can lead to frustration, anxiety, and loss of motivation during the course of the PhD period.



Photo: Prof. Tesfaye while offering training on PhD Mentorship

Next Workshop

Towards the end of Workshop 5, it became clear that more time is needed on the Course Catalogue, and that joint work during Workshop on this task is efficient.

The next workshop will also take time for a financial update, review and plans for the last year 2024.

The next workshop was decided to be:

Time: 27 November, 4-5 days

Host: Makerere University

Karidewa at MAK will issue invitation letters.