

ERASMUS+ PROGRAMME

Project Number: 618509-EPP-1-2020-1-JO-EPPKA2-CBHE-JP

ECO-CAR:

Vocational Training Diploma on Electrical and Hybrid Vehicles

3rd Steering and Scientific Committees Meeting

Agenda

Ostwestfalen-Lippe University of Applied Sciences (TH-OWL)

June 30th – July 1st 2022

Thursday – Friday

Location: <https://goo.gl/maps/SFxbENKBZfAK3bNu5>

Join Zoom Meeting: <https://zoom.us/j/91501565804>



First Day
Thursday, June 30th, 2022
09:00 –19:30

09:00 - 09:30 Registration

Session 1

Chairman: Prof. Salman Ajib
Moderator: Eng. Rasha Al-Beek

09:30 - 09:45 **Brief Welcome by Local Organization at TH-OWL & Project General Coordinator:**
Prof. Dr. Martin Oldenburg, Vice Dean of the Faculty at TH-OWL
Prof. Salman Ajib, ECO-CAR Project Coordinator at TH-OWL
Prof. Ahmed Al-Salaymeh, ECO-CAR General Project Coordinator, The University of Jordan

09:45 - 10:00 **Introducing Participants**

10:00-10:40 **Overall Progress of Eco-Car Project, by:**
Prof. Ahmed Al-Salaymeh, The University of Jordan

10:40–11:00 **Coffee Break**

Session 2

Chairman: Prof. Ahmed Al-Salaymeh
Moderator: Eng. Sara Tweissi

11:00-11:20 **Cluster 1: Hybrid and Electric Vehicle Basics**

Presented by: Prof. Rebhi Damseh & Dr. Ma'moun Al-Smadi

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 1: Hybrid and Electric Vehicle Basics	
Focus Group 1 (Professional Diploma)	Introduction to Automotive Engineering (Introduction to Hybrid and Electric Vehicles)
Focus Group 2 (Community College Diploma)	Hybrid and Electric Vehicle Technology
Focus Group 3 (Vocational Diploma)	Hybrid and Electric Vehicles Systems

University	Role	Name of Responsible Members
BAU	Leader	Prof. Rebhi Damseh and Dr. Ma'moun Al-Smadi
NTUA	Co-Leader	Dr. Clio Vossou
Aachen	Partner	Mr. Stephan Bihn
MU	Partner	Dr. Hussien Al-Majali
UJ	Partner	Dr. Bashar Qawasmeh

11:20-11:35 Cluster 2: Battery Storage Technology, Charging systems, and Recharging Infrastructure.

Presented by: Eng. Florian Ringbeck and Prof. Salman Ajib

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 2: Battery Storage Technology, Charging systems, and Recharging Infrastructure	
Focus Group 1 (Professional Diploma)	1- Energy Storage and Energy Management 2- Power Electronics and Charging Systems
Focus Group 2 (Community College Diploma)	N.A
Focus Group 3 (Vocational Diploma)	Braking and Charging System

University	Role	Name of Responsible Member
Aachen	Leader	Eng. Florian Ringbeck
TH-OWL	Co-Leader	Prof. Salman Ajib & Dr. Sabine Brunklaus
UJ	Partner	Dr. Bashar Qawasmeh & Dr. Hussam Khasawneh
ZUJ	Partner	Dr. Nabeel Abu Shaban
JUST	Partner	Eng. Salaheldeen Abu Yahya

11:35-11:45 Cluster 3: Electric and Hybrid Vehicles Diagnosis for Maintenance and Repair

Presented by: Dr. Wael Adaileh & Dr. Eyad Maaitah

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 3: Electric and Hybrid Vehicles Diagnosis for Maintenance and Repair	
Focus Group 1 (Professional Diploma)	N.A
Focus Group 2 (Community College Diploma)	Malfunction Diagnostics and Repair in Hybrid and Electric Vehicles
Focus Group 3 (Vocational Diploma)	N.A

University	Role	Name of Responsible Member
TTU	Leader	Dr. Wael Adaileh and Dr. Ahmed Mustafa
HTU	Co-Leader	Eng. Alaa Aldaamseh
BAU	Partner	Dr. Mamoun Al-Smadi
Aachen	Partner	Eng. Florian Ringbeck

11:45-12:00 Cluster 4: Internal Combustion Engines in Hybrid Vehicles

Presented by: Prof. Mohammad Hamdan & Dr. Mohammed Al-Majali

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 4: Internal Combustion Engines in Hybrid Vehicles	
Focus Group 1 (Professional Diploma)	Internal Combustion Engine
Focus Group 2 (Community College Diploma)	Internal Combustion Engine
Focus Group 3 (Vocational Diploma)	1- Internal Combustion Engine 2- Cooling & Lubrication Systems

University	Role	Name of Responsible Member
BME	Leader	Eng. Adam Nyerges
MU	Co-Leader	Dr. Mohammed Almajali
JUST	Partner	Prof. Suhail Kiwan
HTU	Partner	Engr. Waleed Sunjuq
UNIVAQ	Partner	Prof. Michele Anatone
UJ	Partner	Prof. Mohammad Hamdan and Dr. Mohammed Alrbai

12:00-12:15 Coffee Break

12:15-12:30 Cluster 5: Automotive Electricity, Electronics, Sensors, and Actuators

Presented by: Prof. Tarek A. Tutunji

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 5: Automotive Electricity, Electronics, Sensors, and Actuators	
Focus Group 1 (Professional Diploma)	Automotive Electronic, Electrical, and Sensing Systems
Focus Group 2 (Community College Diploma)	1- Electrical and Electronics Circuits 2- Electrical and Electronic Systems in Vehicles
Focus Group 3 (Vocational Diploma)	1- Sensors 2- Basic Electricity and Electronics

University	Role	Name of Responsible Member
HTU	Leader	Prof. Tarek A. Tutunji
ZUJ	Co-Leader	Eng. Eman Abdelhafez



TTU	Partner	Dr. Wael Adaileh + Dr. Ahmad Mostafa
BME	Partner	Dr. Máté Zöldy
UJ	Partner	Eng. Mohamad Masad

12:30-12:45 Cluster 6: Vehicle Dynamics

Presented by: Prof. Ayman Abubaker & Dr. Mohammad Bani Khaled

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 6: Vehicle Dynamics	
Focus Group 1 (Professional Diploma)	1- Powertrain Integration in HEVs 2- Vehicle Dynamics
Focus Group 2 (Community College Diploma)	Vehicle Engineering
Focus Group 3 (Vocational Diploma)	1- Powertrain Systems 2- Steering & Suspension Systems 3- Braking and Charging System

University	Role	Name of Responsible Member
ASU	Leader	Dr. Mohammad Bani Khaled
UD	Co-Leader	Jon García-Barrueta
UNIVAQ	Partner	Dr. Carlo Villante
NTUA	Partner	Dr. Clio Vossou
JUST	Partner	Eng. Qatada Damra
TTU	Partner	Dr. Wael Adaileh + Dr. Ahmad Mostafa
HTU	Partner	Eng. Yousef Okour
UJ	Partner	Dr. Hussam Khasawneh + Dr. Hashem Alkhalidi

12:45-13:00 Cluster 7: Health and Safety

Presented by: Dr. Mohammad Almajali

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 7: Health and Safety	
Focus Group 1 (Professional Diploma)	N.A
Focus Group 2 (Community College Diploma)	N.A
Focus Group 3	Safety in Hybrid and Electric Vehicles



(Vocational Diploma)		
University	Role	Name of Responsible Member
MU	Leader	Dr. Mohammad Almajali
UNIVAQ	Co-Leader	Dr. Carlo Villante
BAU	Partner	Dr. Ma'moun Al-Smadi
ZUJ	Partner	Dr. Loai Dabbour
BME	Partner	Dr. Árpád TÖRÖK
UJ	Partner	Eng. Otba Al-Oran

13:00-14:00 Lunch and Group Photo

14:00-15:00 Visit to TH-OWL Labs

Session 3
Chairman: Prof. Tarek Tutunji
Moderator: Dr. Ma'moun Al-Smadi

15:00-15:20 **Cluster 8: Electrical Machines and Drives**
Presented by: Prof. Salman Ajib and Mr. Timo Broeker

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material

Cluster 8: Electrical Machines and Drives	
Focus Group 1 (Professional Diploma)	1- Electrical Machines and Drives 2- Power Electronics and Charging Systems
Focus Group 2 (Community College Diploma)	Electrical Machines and Drives
Focus Group 3 (Vocational Diploma)	Control Systems

University	Role	Name of Responsible Member
TH-OWL	Leader	Prof. Salman Ajib
ASU	Co-Leader	Prof. Ayman Abu Baker
HTU	Partner	Dr. Muhannad Al-Tarifi
BAU	Partner	Dr. Ma'moun Al-Smadi
UJ	Partner	Prof. Dia Abu Alnadi

15:20-15:50 **Cluster 9: Labs & Workshops**
Presented by: Prof. Rebhi Damseh, Dr. Ma'moun Al-Smadi, and Dr. Wail Adaileh

- ✓ Courses outlines
- ✓ Courses content
- ✓ Upcoming tasks and challenges
- ✓ Timeline to submit the cluster material



Cluster 9: Labs & Workshops	
<p style="text-align: center;">Focus Group 1 (Professional Diploma)</p>	<p>1- Introduction to Automotive Engineering (Introduction to Hybrid and Electric Vehicles) Workshop</p> <p>2- Internal Combustion Engine Workshop</p> <p>3- Electrical Machines and Drives Workshop</p> <p>4- Powertrain Integration in HEVs Workshop</p> <p>5- Power Electronics and Charging Systems Lab</p> <p>6- Energy Storage and Energy Management Lab</p> <p>7- Automotive Electronic, Electrical, and Sensing Systems Lab</p> <p>8- Vehicle Dynamics Lab</p>
<p style="text-align: center;">Focus Group 2 (Community College Diploma)</p>	<p>1- Hybrid and Electric Vehicle Workshop</p> <p>2- Workshop of Electrical and Electronic Systems in Vehicles</p> <p>3- Malfunction Diagnostics and Repair in Hybrid and Electric Vehicles Workshop</p> <p>4- Vehicle Engineering workshop</p> <p>5- Internal Combustion Engine Lab</p> <p>6- Electrical Machines and Drives Lab</p> <p>7- Electrical and Electronics Circuits Lab</p>
<p style="text-align: center;">Focus Group 3 (Vocational Diploma)</p>	<p>1- Hybrid and Electric Vehicles Systems Workshop</p> <p>2- Sensors Lab</p> <p>3- Braking and Charging System Workshop</p> <p>4- Powertrain Workshop</p> <p>5- Internal Combustion Engine Workshop</p> <p>6- Steering & Suspension Systems Workshop</p>



- 7- Cooling & Lubrication Systems Workshop
- 8- Basic Electricity and Electronics Lab
- 9- Braking and Charging System Workshop
- 10- Safety in Hybrid and Electric Vehicles Workshop
- 11- Control Systems Lab

University	Role	Name of Responsible Member
BAU	Leader	Prof. Rebhi Damseh + Dr. Ma'moun Al-Smadi
TTU	Co-Leader	Dr. Wail Adaileh + Dr. Ahmed Mustafa
JUST	Co-Leader 2	Eng. Salheddin Abu Yahya
UD	Partner	Jon García-Barruetaña
UNIVAQ	Partner	Prof. Michele Anatone
HTU	Partner	Engr. Yousef Okour
ASU	Partner	Prof. Ayman AbuBaker

15:50-16:10 Coffee Break

Session 4

Chairman: Prof. Mohammed Hamdan

Moderator: Eng. Eman Abdelhafez

16:10-16:20 **WP1: Establishing university-enterprise cooperation Plan, by Prof. Fahmi Abu Al-Rub, Eng. Salaheddin Abuyahya, JUST**

- Status of Eco-Car network
- Work plan for enhancing network in Eco-Car project
- Upcoming tasks

16:20-16:30 **WP2: Baseline Study Plan, by Prof. Ayman Abubaker & Dr. Mohammed Bani Khaled (ASU)**

- Status of the research paper
- Work plan for new research paper
- Upcoming tasks

16:30 - 17:00 **WP6: Quality and Impact Evaluation Plan by Dr. Ivan Dyukarev, UD**

- ✓ Status of quality and impact evaluation
- ✓ EE tasks
- ✓ Upcoming tasks

17:00-18:00 **WP3: Capacity Building Plan, by Dr. Clio Vossou , NTUA**

17:00-17:10

- ✓ Status of the Training Workshops in Europe for staff and students
- ✓ Selection criteria for staff training



- ✓ Training material
- ✓ Upcoming Tasks

Training Workshops in EU Partners: (17:10-18:00)

- ✓ Workshop dates
- ✓ Workshop title and contents
- ✓ Workshop outcomes

Time	University	Presenter
17:10-17:20	Technische Hochschule Ostwestfalen-LIPPE (TH-OWL)	Prof. Salman Ajib
17:20-17:30	Rheinisch-Westfaelische Technische Hochschule Aachen (RWTH-Aachen)	Stephan Bihn Florian Ringbeck
17:30-17:40	Universidad de la Iglesia de Deusto (UD)	Dr. Ivan Dyukarev Sara Goitia Ubierna
17:40-17:50	National Technical University of Athens (NTUA)	Prof. Dimitrios Koulocheris Dr. Clio Vossou
17:50-18:00	Universita of L'Aquila	Prof. Michele Anatone Dr. Marco Calabrese

18:00-18:30 Discussion and Conclusions

Session 5

Chairman: Prof. Rebhi Damseh

Moderator: Eng. Salaheddin Abu Yahya

18:30-19:30 Workshop for Jordanian Partners

- ✓ Discuss the application of ECO-CAR diplomas at each university
- ✓ Discuss courses status for each university (current courses, new courses, to be updated, to be injected) for ECO-CAR diplomas
- ✓ Selection of staff members/university to participate in training workshops
- ✓ Prepare PPT for the 2nd day to present the outputs

19:30 End of the 1st day

Second Day
Friday, July 1st, 2022
09:00 –17:00

09:00-09:30 Registration

Session 6

Chairman: Prof. Fahmi Abu Al-Rub
Moderator: Eng. Sara Tweissi

09:30-09:40 Introduction Speech and Instructions, by:
Prof. Salman Ajib, TH-OWL

09:40-11:40 Workshop Outputs for Jordanian Partners

- ✓ Discuss the application of ECO-CAR diplomas at each university
- ✓ Discuss courses status for each university (current courses, new courses, to be updated, to be injected) for ECO-CAR diplomas
- ✓ Selection of staff members/university to participate in training workshops
- ✓ Name of the department where the diploma will be settled.
- ✓ Work plan for ECO-CAR diploma accreditation

Time	Partner Name	Presenter
09:40 - 09:55	The University of Jordan (UJ)	Prof. Mohammed Hamdan Eng. Rasha Al-Beek
09:55 - 10:10	Jordan University of Science and Technology (JUST)	Prof. Fahmi Abu AlRub Eng. Salaheddin Abu Yahya
10:10 - 10:25	Mutah University (MU)	Prof. Omer Maaitah Dr. Mohammad Almajali
10:25 - 10:40	Tafila Technical University (TTU)	Dr. Wa'el Adaileh Dr. Eyad Maayta
10:40 - 10:55	Al-Balqa Applied University (BAU)	Prof. Rebhi Damseh Dr. Mamoun Al-Smadi
10:55 – 11:10	Al-Hussein bin Abdullah II Technical University (HTU)	Prof. Tarek Tutunji Prof. Abdullah Abdullah
11:10 – 11:25	Applied Science University (ASU)	Prof. Ayman Abybaker Dr. Mohammed Bani Khaled
11:25 – 11:40	Al-Zaytoonah University of Jordan (ZUJ)	Dr. Loai Dabbour Dr. Nabeel Abu Shaban

11:40-12:00 Coffee Break

Session 7

Chairman: Dr. Wail Adaileh
Moderator: Eng. Rasha Al-Beek

12:00-13:20 **WP4:** Establishment of EV/HEV labs Plan, by **Prof. Rebhi Damseh & Prof. Ahmed Al-Salaymeh**

- EV/HEV centres at JO institutions (location, infrastructure, activities)
- Upcoming tasks

Time	University	Presenter
12:00-12:10	The University of Jordan	Prof. Mohammed Hamdan Eng. Sara Tweissi
12:10-12:20	Jordan University of Science and Technology (JUST)	Prof. Fahmi Abu AlRub Eng. Salaheddin Abu Yahya
12:20-12:30	Mutah University (MU)	Prof. Omer Maaitah Dr. Mohammad Almajali
12:30-12:40	Tafila Technical University (TTU)	Dr. Wa'el Adaileh Dr. Eyad Maayta
12:40-12:50	Al-Balqa Applied University (BAU)	Prof. Rebhi Damseh Dr. Mamoun Al-Smadi
12:50-13:00	Al-Hussein bin Abdullah II Technical University	Prof. Tarek Tutunji Prof. Abdullah Abdullah
13:00-13:10	Applied Science University	Prof. Ayman Abybaker Dr. Mohammed Bani Khaled
13:10-13:20	Al-Zaytoonah University of Jordan	Dr. Loai Dabbour Dr. Nabeel Abu Shaban
13:20-13:40	WP7: Dissemination and Sustainability Plan, by Prof. Tarek Tutunji, HTU	
	<ul style="list-style-type: none"> ✓ ECO-CAR Newsletter ✓ ECO-CAR Website ✓ Marketing Plan ✓ Upcoming tasks 	
13:40 – 14:00	Discussion & Evaluating the meeting	
14:00 – 15:00	Lunch	
Session 8		
<i>Chairman: Prof. Omar Maaitah</i>		
<i>Moderator: Hanan Hasan</i>		
15:00-15:45	WP8: Project Management Plan, by Prof. Ahmed Al-Salaymeh, UJ	
	<ul style="list-style-type: none"> ✓ Establishment of Management and Operational Structures and running the project ✓ Financial Management ✓ Reporting (Progress, Intermediate and Final Reports) ✓ Upcoming Meetings 	
15:45-16:30	Activities ECO-CAR Upcoming Work plan, by:	
	Prof. Ahmed Al-Salaymeh, The University of Jordan	
16:30-17:00	Conclusion of the 2 days and summary of the upcoming tasks for ECO-CAR work packages	
17:00	Closing and Summary of the Meeting	