



ACADEMIC STAFF EXCHANGE REPORT

SUMMARY

Professor Abdulkader JOUKHADAR performed a visit to the University of West Attica in the period from 4 July 2021 up to and including 31 July 2021, in the context of the Erasmus+ Inter-Instructional Agreement between the University of West Attica (UWA) and the University of Aleppo (UAL).

In the course of his visit, Prof. Joukhadar was occupied on a daily basis, carrying out teaching, development and scientific activities, including the following:

- delivering a series of lectures to-graduate (Masters) students;
- delivering presentations of UAL to UWA staff;
- holding informational meetings and planning further cooperation activities;
- leading technical workshops attended by UAL researchers and PhD candidates;
- performing joint research work with UWA staff;
- planning for new joint research and technological development projects.

During his stay, Prof. Joukhadar was provided with office facilities and secretarial support by the Department of Mechanical Engineering, and with a guest network, e-mail account and other IT services by the Network Operation Centre of UWA (cf. in Annex IV attached letter by the Erasmus+ Coordinator of the Dpt. of Mechanical Engineering).

Prof. Joukhadar's visit produced a range of results, in line with the objectives of the Erasmus+ International Mobility charter. The main of these outcomes are summarized below.

ACTIVITIES AND OUTCOMES / IMPACT

A day-to-day account of Prof. Joukhadar's activities during his visit is given in Annex I of the Report. The key aspects of the activities are presented below, classified according to their outcome and impact relevant to the objectives of the Erasmus+ mobility.

Teaching and Lecturing

Prof. Joukhadar delivered a series of lectures in the context of the Master's Programme "New Technologies in Shipping and Transport" of the Department of Industrial Design and Production Engineering of UAW (Annex IV includes a letter by the Masters' Programme

Director Prof. Papoutsidakis). Due to restrictions relating to the SARS-CoV-2 pandemic, the teaching sessions were carried out using remote (e-learning) facilities.

Also, Prof. Joukhadar lectured and directed a series of workshops involving PhD candidates and associate and permanent UniWA staff (V. Michalainas, V. Sagias, A.M. Tsainis, A. Chatzopoulos, G. Chamilothis, D. Piromallis, M. Papoutsidakis).

Prof. Joukhadar's presentations and lectures addressed the following scientific topics

- Advanced control techniques for mobile robotics systems, including Unmanned Aerial Vehicles (UAVs)
- Advanced state estimation and parameter identification methods and algorithms, for non-linear control systems (including UAVs)
- Meta-heuristic approaches and methods for controlling swarms and networking and cooperation between UAVs
- Intelligent techniques for collision avoidance and Simultaneous Localization and Mapping (SLAM).

Furthering Scientific Cooperation Between the Universities

During his stay at UWA, Prof. Joukhadar worked with UWA academics on several research topics of common interest. The main cooperations are listed below.

- Applications of the Unscented Kalman filter for position and posture estimation of robotic vehicles using multiple sensors and waypoint markers (with G. Chamilothis).
- Control and identification algorithms and advanced on-board digital equipment for Simultaneous Localization and Mapping (SLAM) for individual un-manned aerial vehicles (UAV) and swarms, used in agricultural applications (with D. Piromallis).
- Development of low-cost educational platforms for teaching Robotics and Mechatronics at different educational levels: various school grades, technical and university courses (with A. Chatzopoulos, G. Chamilothis).

Furthering Academic Cooperation Between the Universities

Prof. Joukhadar held extensive meetings with UWA staff to discuss several academic development projects.

- Development of a Masters Programme in Mechatronics (with members of the Department of Industrial Design and Production Eng. and the Department of Mechanical Eng.)
- Joint development of integrated multi-role platforms for teaching Mechatronics and Robotics courses at graduate and post-graduate level and for experimentation in research (with G. Chamilothis, D. Piromallis, M. Papoutsidakis).
- Pilot implementation of the ECTS at the Mechatronics Department of UAL (with K. Nikas).
- Design and development of a Bio-Mechatronics Laboratory, with a focus on low-cost, 3D-printed prosthetics.
- Advanced automation methods applied for monitoring water distribution, for automated detection and management of water losses, for optimal regulation of low-speed wing turbines for electricity production (also with externals).

Promoting Staff and Student Exchange

During his stay, Prof. Joukhadar worked with UWA staff to facilitate the exchange of university staff and students between UAL and UWA. This cooperation covered several points, some of which are summarized below.

- Fine-tuning the practical requirements and organizational issues and processes for Erasmus+ exchanges (Visa, insurance, tests and procedures relating to Covid-19 etc.)
- Planning of visits of UWA academics to UAL for teaching and training activities: G. Chamilothis, S. Chlouveraki, S. Vassiliadis, K. Nikas.
- Planning of visits of UAL doctoral students to UWA in the context of jointly supervised research: Ms Dahlia Kass Hanna (advanced state estimation of non-linear systems) and Mr Mohamed Shahabi (coordinated operation of UAVs).
- Planning of visits of UAL academics from Engineering Departments of UAL: the Department of Mechatronics Engineering, Department of Mechanical Engineering, Department of Electronics Engineering, Department of Electrical Engineering.

Joint Supervision of MSc and PhD projects

The cooperation of Prof. Joukhadar with UWA academics and researchers identified the following possibilities for joint supervision of projects:

- doctoral-level research work of Mr Avraam Chatzopoulos (with M. Papoutsidakis);
- doctoral-level research work of Ms Dahlia Kass-Hanna (with G. Chamilothis);
- post-graduate thesis topics in the Masters programme "Un-manned Autonomous and Remotely-Controlled Vehicles";
- post-graduate thesis topics in the Masters programme "New Technologies in Shipping and Transport".

Athens, 30 July 2021



Prof. Abdulkader JOUKHADAR
UAL Erasmus+ ICM
Visiting Scholar

Athens, 25 August 2021



Prof. Georgios Chamilothis
UWA Erasmus+ ICM
Country Coordinator for Syria

Annexes

I. Visit Log

II. List of Contacts

III. Exhibits

IV. Letters of Attestation

ANNEX I**VISIT LOG**

Notes: all dates in the month of July 2021

T-hrs = duration of teaching activities in hours

UWA = University of West Attica

UAL = University of Aleppo

<i>Date</i>	<i>Activities</i>	<i>Key Participants</i>	<i>T-hrs</i>
Sun 04	Air travel, arrival Athens, transit to stay location	-	
Mon 05	Meeting with UWA staff, hosting arrangements, planning of weekly schedule	K. Stergiou, G. Chamilothis, M. Kokkali, A. Gioftsou, A. Stavropoulou, E. Stavropoulou	
Tue 06	Meeting at the UWA Erasmus+ office, presentation of internationalization activities of UAL and its Faculties, presentation of UWA internationalization activities	S. Vassiliadis, G. Dalezios, D. Matsouka, F. Papoutsi, I. Vatou	
Wed 07	Meeting with Greek academics and industrial specialists, involved in research in advanced automation systems	G. Chamilothis, K. Katsiavrias, F. Koumboulis N. Kouvakas, G. Tsigkos	
Thu 08	Meeting with UWA academics, presentation of the Faculty of Electrical and Electronics Engineering of UAL	K. Nikas, M. Papoutsidakis, G. Chamilothis	
Fri 09	Visit and presentation at the CNC lab of the Department of Mechanical Engineering	Z. Kanetaki, K. Dourou, K. Stergiou	
Sat 10	Meeting with UniWA academics, initial planning of proposal regarding new Masters courses at UAL	K. Nikas, S. Kaminaris K. Kavadias, D. Piromallis	
Sun 11	Meeting with UWA academics, discussion on research topics of common interest	G. Chamilothis, M. Papoutsidakis	
Mon 12	Meeting with UWA staff, practical arrangements, planning of weekly schedule, discussion with the Dean of the School of Engineering	K. Stergiou, G. Ioannidis, G. Chamilothis, M. Kokkali	
Tue. 13	Meeting at the UWA Erasmus+ office, scheduling exchanges of students and staff for academic year 2021-2022, planning new KA1 proposal	S. Vassiliadis, G. Dalezios, D. Matsouka,	

<i>Date</i>	<i>Activities</i>	<i>Key Participants</i>	<i>T-hrs</i>
		F. Papoutsis, I. Vatou	
Wed. 14	Visit and presentation of the laboratories and facilities of the Dpt. of Mechanical Engineering	K. Stergiou, G. Chamilothis, K. Kavvadias, K. Nikas	
Thu. 15	Visit and presentation of the Mechatronics Lab and facilities of the Dpt. of Industrial Design and Production Engineering	A. Chatzopoulos, Ch. Drosos, M. Papoutsidakis, D. Piromalis, E. Theocharis	
Fri. 16	Workshop on techniques and didactic approaches for advanced control topics	NTST teaching staff, Doctoral candidates	4
Sat. 17	Meeting UWA academics, planning of a proposal regarding new Masters courses at UAL	S. Chlouveraki, G. Chamilothis, M. Papoutsidakis	
Sun. 18	Meeting with UniWA academics, discussion on research topics of common interest	G. Chamilothis, M. Papoutsidakis	
Mon. 19	Meeting with UWA staff, practical arrangements, planning of weekly schedule	K. Stergiou G. Chamilothis, M. Kokkali	
Tue. 20	Technical meeting UWA staff, lecture NTST Masters Programme	NTST students, teaching staff	3
Wed. 21	Technical meeting UWA staff, lecture NTST Masters Programme	NTST students, teaching staff	3
Thu. 22	Technical meeting UWA staff, lecture at Masters Programme "New Technologies in Shipping and Transport" (NTST)	NTST students, teaching staff	3
Fri. 23	Workshop on techniques and didactic approaches for advanced control topics	NTST teaching staff, Doctoral candidates	4
Sat. 24	Meeting with UniWA academics, discussion on the use of e-learning in engineering disciplines	G. Chamilothis, K. Stergiou, M. Thymi	
Sun 25	Meeting with UniWA academics, discussion on research topics of common interest	G. Chamilothis, M. Papoutsidakis	
Mon. 26	Technical meeting with UWA staff, lecture NTST Masters Programme	NTST students, teaching staff	3
Tue. 27	Technical meeting with UWA staff, lecture NTST Masters Programme	NTST students, teaching staff	3
Wed. 28	Technical meeting with UWA staff, lecture NTST Masters Programme	NTST students, teaching staff	3
Thu. 29	Meeting UWA academics, planning of pilot ECTS	K. Nikas,	

<i>Date</i>	<i>Activities</i>	<i>Key Participants</i>	<i>T-hrs</i>
	implementation at UAL	G. Chamilothis	
Fri. 30	Meeting UWA academics, planning of a proposal regarding Bio-Mechatronics Laboratory at UAL	G. Chamilothis, A. Chatzopoulos, M. Papoutsidakis, D. Piromalis	
Sat. 31	Air travel, departure from Athens	-	

ANNEX II

LIST OF CONTACTS

UWA Staff

Chamilothoris Georgios, Professor, Dpt. of Mechanical Engineering
Chatzopoulos Avraam, Lecturer, Dpt. of Industrial Design and Production Engineering
Chlouveraki Stefania, Associate Professor, Dpt. Conservation of Antiquities & Works of Art
Dourou Kleopatra, Teaching Staff, Dpt. of Mechanical Engineering
Drosos Christos, Teaching Staff, Dpt. of Industrial Design & Production Engineering
Gioftsou Anna, Secretary, Dpt. of Mechanical Engineering
Ioannidis Georgios, Professor, Dean of School of Engineering
Kaminaris Stavros, Professor, Dpt. of Electrical & Electronics Engineering
Kanetaki Zoi, Lecturer, Dpt. of Mechanical Engineering
Kavvadias Kosmas, Associate Professor, Dpt. of Mechanical Engineering
Kokkali Maria, Chief Secretary, Dpt. of Mechanical Engineering
Michalainas Vassilios, Mech. Engineer, Doctoral candidate
Nikas Konstantinos, Associate Professor, Dpt. of Mechanical Engineering
Papoutsidakis Michail, Professor, Adjoint Head Dpt. of Ind. Design & Production Engineering
Piromalis Dimitrios, Assistant Professor, Dpt. of Industrial Design & Production Engineering
Sklavounou Eleni, Mech. Engineer, Doctoral candidate
Stavropoulou Aikaterini, Secretary, Dpt. of Mechanical Engineering
Stavropoulou Eleni, Secretary, Dpt. of Mechanical Engineering
Stergiou Konstantinos, Professor, Head of the Dpt. of Mechanical Engineering
Theocharis Eustathios, Teaching Staff, Dpt. of Industrial Design & Production Engineering
Tsainis Andreas-Marios, Mech. Engineer, Doctoral candidate

Externals

Katsiavrias Konstantinos, E.E. Engineer, Managing Director, AKATT S.A.
Koumboulis Fotios, Professor, Dpt. Digital Industry, Nat. Kapodistrian University of Athens
Kouvakas Nikolaos, Professor, Dpt. Digital Industry, Nat. Kapodistrian University of Athens
Thymi Maria, Internet Graphics Designer, MT Studio
Tsigos Georgios, E.E. Engineer, Technical Director, Othrys S.A.

UWA Erasmus+

Vassiliadis Savvas, Professor, Director of Erasmus+ UWA
Chamilothoris Georgios, Erasmus+ Country Responsible: Syria
Kavvadias Kosmas, Erasmus+ Coordinator: Dpt. of Mechanical Engineering
Dalezios Georgios, Financials Specialist, UWA Erasmus+ Office
Matsouka Dimitra, Administrative Staff, UWA Erasmus+ Office
Papoutsi Fani, Staff Mobility Specialist, UWA Erasmus+ Office
Vatou Irene Athena, Students Mobility Specialist, UWA Erasmus+ Office

Επικοινωνία Αναζήτηση en


ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΑΤΤΙΚΗΣ
Τμήμα Μηχανολόγων Μηχανικών

Το Τμήμα Προσωπικό Προπτυχιακές Σπουδές Μεταπτυχιακές Σπουδές e-Γραμματεία Ανακοινώσεις

αρχική / ανακοινώσεις / ακαδημαϊκή επίσκεψη: καθηγητής a. joukhadar

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Ιούλ

Ακαδημαϊκή Επίσκεψη: Καθηγητής Α. JOUKHADAR
13:35 · Share



Κατά τη διάρκεια του μηνός Ιουλίου, το Πανεπιστήμιο Δυτικής Αττικής υποδέχεται τον Δρ Abdulkader Joukhadar, Καθηγητή του Τμήματος Μηχανικών Μηχαντρονικής (Mechatronics) και Αντιπρύτανη του Πανεπιστημίου του Αλέπο της Συρίας, στο πλαίσιο της διδρυματικής συμφωνίας Erasmus+ μεταξύ των Ιδρυμάτων. Κατά τη διάρκεια της επίσκεψής του, ο Καθηγητής κ. Joukhadar θα έχει ακαδημαϊκές και επιστημονικές συνεργασίες με μέλη και ομάδες της κοινότητας του ΠαΔΑ και επίσης θα παραδώσει παρουσιάσεις και διαλέξεις στο θεματικό τομέα της Μηχαντρονικής και των προηγμένων συστημάτων αυτομάτου ελέγχου.

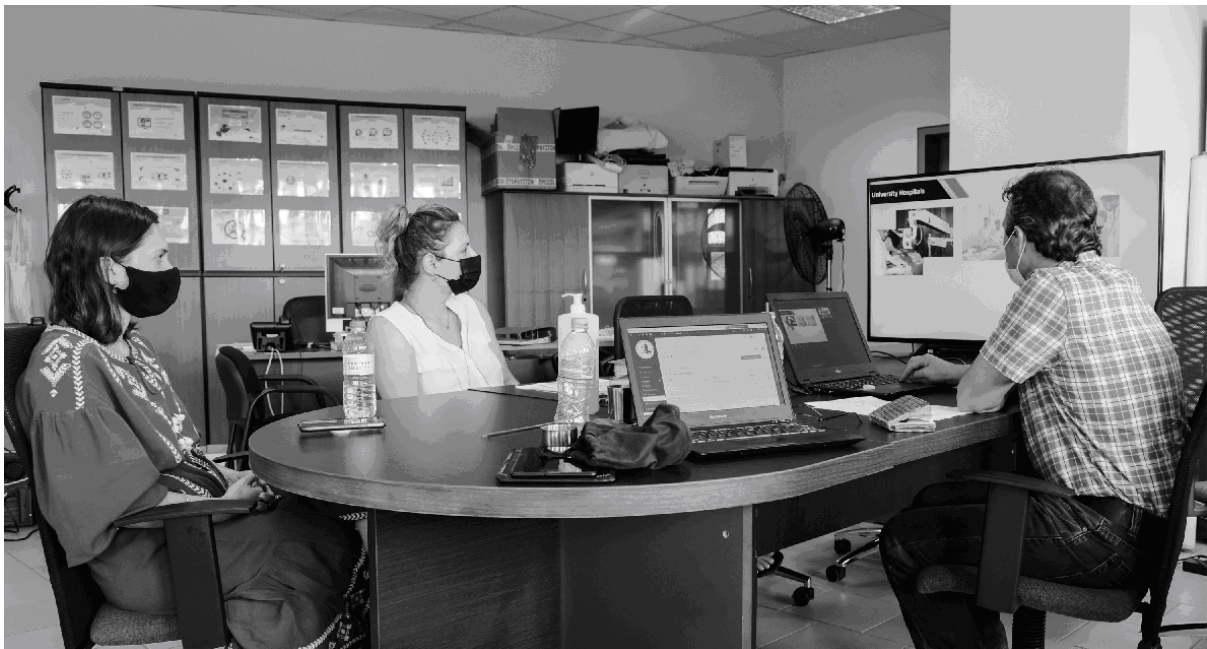
Visit Circular

<https://mech.uniwa.gr/anakoynoseis/akadimaiki-episkepsi-kathigitis-a-joukhadar/>

*At the office*



With staff at the Department of Mechanical Engineering



With staff at the Department of International Academic Issues & Students' Exchange

ANNEX IV

LETTERS OF ATTESTATION

Letter by Professor Michael Papoutsidakis

Letter by Associate professor Kosmas Kavvadias



To: Whom it may concern

Letter of Attestation
Seminar lectures by Professor A. Joukhadar

In the course of July 2021 visiting scholar Professor Abdulkader JOUKHADAR delivered a seminar in the context of the Masters Programme "New Technologies in Shipping and Transport" (NTST). Dr Joukhadar's lectures addressed the following topics:

- technologies of Unmanned Marine and Aerial Vehicles to support transport operations,
- advanced Simultaneous Localisation and Mapping (SLAM) in Shipping,
- methods and techniques for efficient state estimation for airborne, marine and ground transport systems.

In total, Dr Joukhadar delivered six three-hour lectures, scheduled within the programme's daily sessions timed from 18:00 to 21:00 hours. The seminar was attended by a cohort of 16 students of the NTST post-graduate programme and by members of the teaching staff.

The seminar was followed by a workshop session led by Dr Joukhadar, where members of the Programme's Academic Panel exchanged views and learnings regarding the contents and didactic approaches to advanced automatic control, state-estimation and related topics.

Due to concerns relating to the COVIS-19 pandemic, in the academic year 2020-2021 teaching of Master's programmes at the University of West Attica was carried out by synchronous e-learning (Internet-based) methods.

Athens, August 2021

Professor Michail G. Papoutsidakis
Director of Post-Graduate Programme "New Technologies in Shipping and Transport"
Deputy Head of the Department of Industrial Design and Production Engineering



Date: Athens, 5 August 2021

To: Whom it may concern

Letter of Attestation
Visit by Professor A. Joukhadar

Professor Abdulkader JOUKHADAR joined the University of West Attica in the period from 5 July up to including 30 July 2021, in the context of the Erasmus+ Inter-institutional Agreement between the University of West Attica (UWA) and the University of Aleppo (UAL).

In the course of his visit, Dr Joukhadar was fully occupied, carrying out teaching, development and scientific activities on a daily basis, including the following:

- delivering a series of lectures to-graduate (Masters) students;
- delivering presentations of UAL to UWA staff;
- holding informational meetings and planning further cooperation activities;
- leading technical workshops attended by UAL researchers and PhD candidates;
- performing joint research work with UWA staff;
- planning for new joint research and technological development projects.

During his stay, Dr Joukhadar was hosted at the office facilities of the Department of Mechanical Engineering of the University of West Attica and provided with a guest network and e-mail account, and with other administrative and Information-Technology services.

Kosmas Kavadias
Associate Professor
Erasmus+ Department Coordinator for the Dpt. of Mechanical Engineering

Georgios Chamilothis
Professor
Erasmus+ Country responsible for Syria