

Dr. Osama M. Al-Habahbeh

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Amman, Jordan



Education:

- Jan. 2007– Jan.2010: Clarkson University, New York.
PhD in Mechanical Engineering, Dissertation title: "Integrated approach for physics-based reliability assessment of engineering systems". Courses taken: Monte Carlo simulation, Stochastic processes, Computational fluid dynamics, Seminar, ESL Academic writing III.
- Aug. 2006- Jan. 2007: University of Toledo, Ohio.
Enrolled in the engineering sciences PhD program, Courses taken: Advanced mechanics of materials, Advanced engineering mathematics I, Elasticity.
- Oct. 2002– Feb. 2005: The University of Jordan, Amman, Jordan.
M.Sc. in Mechanical Engineering, Thesis title: "Composite LPG vessels as an alternative to steel vessels used in the local market". Courses taken: Optimum design, Computer-aided design and modeling, Mechanical vibrations, Advanced fluid mechanics, Fracture mechanics, Research methodology, Finite element method, Combustion.
- Sep.1990– Jan.1995: The University of Jordan, Amman, Jordan.
B.Sc. in Mechanical Engineering. Graduation project: Fuel-oil heating by solar energy. Practical training: Automotive maintenance engineering at the General Transportation Corporation.
- Sep.1984- Jun.1990: Al-Shobak Secondary School, Al-Shobak, Ma'an Governorate, Jordan.
General Secondary Education Certificate (Tawjihi), Scientific stream.

Experience:

- Sep. 2020- Present: Associate Professor, Mechatronics Engineering Dept., University of Jordan, Amman, Jordan.
 - Teach Dynamics & Vibrations, Engineering materials & manufacturing technology, Introduction to Aviation Engineering courses in accordance with ABET accreditation.
 - Conduct research, Serve the university and the community.
 - Supervise an average of six graduation projects annually in subjects such as manufacturing, control systems, renewable energy, water desalination and robotics.
- Aug. 2019- May 2020: Associate Professor, Mechanical Engineering Department, American University of the Middle East (AUM), Egaila, Kuwait.
 - Teach Basic Mechanics I, Thermodynamics I, and Introduction to Design, Entrepreneurship, and Innovation, in accordance with ABET accreditation.
 - Coordinate with other faculty members in multi-section courses.
 - Supervise student's capstone projects.
- Feb. 2016- Aug 2019: Associate Professor, Mechatronics Engineering Dept., University of Jordan, Amman, Jordan.
 - Conduct research, Serve the university and the community, Teach both Traditional classroom and Blended-Learning courses in accordance with ABET accreditation.

- Supervised more than 40 graduation projects, which include designing, building and programming physical and virtual prototypes. Subjects include; Hybrid and electric aircraft, Battery thermal management, Factory energy audit, Nano drones, Aircraft gust wind control, Home automation, Hydraulic and Pneumatic muscles, Inertial navigation units, IOT applications, Robots, RF and EMF effects, Self-driving vehicles.
- Feb. 2015- Sep. 2016: Deputy Dean of Students' Affairs, University of Jordan, Amman, Jordan.
 - Supervise and follow-up Deanship departments including administration and financial affairs, student activities, services, support, housing, health care, initiatives, human resources issues, etc.
 - Heading appointments, promotions, celebrations and disciplinary committees, and appraising departments' directors.
 - University representative at the Arab Council for Training Students of Arab Universities (ACTSAU).
- Nov. 2014- Sep. 2016: Director, Career Guidance and Alumni Office/King Abdullah II Fund for Development, Amman, Jordan.
 - Implement vision and mission of the office by planning, supervising, and follow-up.
 - Manage the staff, allocate work load, assign priorities, and set long and short term goals.
 - Office duties include training, recruiting, public relations, career guidance, coordinating, and alumni relations.
 - Organize Job Fairs for University students.
 - Matching graduates with internships and full-time jobs
 - Matching students to off-campus part-time jobs
- Feb.2011– Feb.2016: Assistant Professor, Mechatronics Engineering Dept., University of Jordan, Amman, Jordan.
 - Member of the Faculty of Engineering & Technology Board.
 - Taught the following subjects: Integrated system design, Robotic systems, Numerical methods, Automation, Modeling & Simulation, Aeronautical engineering, Dynamics and vibrations, Statics and mechanics of materials, Engineering materials and manufacturing technology.
 - Performed research and published papers in peer-reviewed journals and conferences.
 - Supervised more than 60 graduation projects, which include designing, building and programming physical and virtual prototypes. Subjects include; Quadrotor control, Aircraft models, Monorail design, Autonomous vehicles, Image processing for security, Autopilot systems, Airship control, Pumping station control, Reliability simulation, Biomedical devices, Manufacturing systems, Oil and gas instruments, Robots, Photovoltaic systems, Smart materials applications, Wind turbines.
- Sep.2010 – Feb.2011: Assistant Professor, Mechanical Engineering Dept., The Hashemite University, Zarqa, Jordan.
 - Teaching Dynamics, Finite elements for Machine Design, Numerical Methods, and Strength of Materials Lab.
- Jan.2010 – Sep.2010: Research Associate, Centre for Infrastructure Performance and Reliability (CIPAR), University of Newcastle, Australia.
 - Reliability assessment of structures subjected to blast loading.
 - Teaching Computational Fluid Dynamics (CFD).
 - Advising student's projects.
- Jan.2007 – Jan.2010: Research Assistant, Clarkson University jointly with GE Energy, Texas, USA.
 - Developed a reliability simulation tool for a gas turbine intercooler, including heat exchanger, pump skid, expansion joints, and bleed valves.
- Aug.2006 – Jan.2007: Teaching Assistant, Mechanical, Industrial, and Manufacturing Engineering Department, University of Toledo, Ohio, USA.
 - Tutoring undergraduate engineering students in Engineering drawing and Machinery .

- Nov.1998 – Jul.2006: Senior Engineer and Instructor, Aircraft Performance and Flight Operations Engineering, Royal Jordanian Airlines, Amman, Jordan
 - Supervised a team of performance engineers
 - Member of RJ Fuel Committee (\$200 m annual purchases)
 - Implemented innovative fuel savings program that lead to higher profits
 - Trained pilots, engineers, and dispatchers for a number of Arab and foreign carriers
 - Conducted more than 500 flight hours of aircraft auditing especially after maintenance.
 - Provided technical support and planning in coordination with maintenance department according to IATA Operational Safety Audit (IOSA) program.
 - Participated in many technical and managerial courses locally and internationally.
- Aug.1998 – Oct.1998: Quality Assurance Supervisor, Century Investment Group, Irbid QIZ, Jordan.
 - Responsible for Quality Assurance of the Men's suits factory which has 800 workers; That includes compliance with standards and procedures for supervisors, workers and machinery.
- Apr.1998 – Jul.1998: Design Engineer, Nasser Investment Group, Amman, Jordan.
 - Designed Steel Containers to DIN and ISO 9001 standards.
- Oct.1996 – Nov.1997: Mechanical Engineer, Inmech (M) Sdn Bhd, Selangor, Malaysia.
 - Designed Pressure Vessels such as water softener and sterilizer using ASME Standards.
 - Designed boiler house, pumps, chimney, piping, ducts, valves, and other ancillaries.
- Mar.1995 – Aug.1996: Freelance national tour leader, Jordan.
 - Guided incoming tourist groups across the country.

Publications:

Full updated list available at:

https://www.researchgate.net/profile/Osama_Al-Habahbeh/research

Sample Journal papers:

- 1- Osama M. Al-Habahbeh, Anas E. Yamin, Haitham Y. Naji, Mohamed F. Qasem, Assessment of the Local Levels of Exposure to Electromagnetic Field and Radio Frequency, Jordan J. Electrical Engineering (JJEE), Vol. 4, No. 3, 2018 Pages 143-150.
- 2- O. M. Al-Habahbeh, A. Mohammad, A. Al-khalidi, M. Khanfer, M. Obeid, Design optimization of a large-scale thermoelectric generator, J. King Saud University – Engineering Sciences, Vol. 30 (2018), pp. 177-182.
- 3- O. M. Al-Habahbeh, M. Al-Saqqa, M. Safi, T. Abo Khater, Review of magneto hydrodynamic pump applications, Alexandria Engineering J. (AEJ), Vol. 55 (2016), pp. 1347–1358.
- 4- Osama M. Al-Habahbeh, Rawan A. Alomosh, Dana K. Aldebie, Reliability Simulation of Solar Concentrator Receiver, Int'l J. Sustainable Energy, 2016, Vol. 35, No. 8, pp. 793-801.
- 5- O. M. Al-Habahbeh, H. J. Al-Hamad, L. S. Al-Sakka, H. M. Al-Sahori, Viable Design of an Arm Prosthesis System, Int'l J. Advanced Science and Technology (IJAST), Vol. 17 (2014).
- 6- O. M. Al-Habahbeh, D. K. Aidun, P. Marzocca, H. Lee, Integrated Physics-Based Approach for the Reliability Prediction of Thermal Systems, Int'l J. Reliability & Safety, Vol. 5, No. 2, 2011. pp. 110-139.

Sample Conference papers:

- 1- O. M. Al-Habahbeh, B. A. Al-Hrout, E. M. Al-Hiary, S. A. Al-Fraihat, Reliability investigation of photovoltaic cell using finite element modeling, Proceedings of the 9th International Symposium on Mechatronics and its Applications (ISMA13), Amman, Jordan, April 9-11, 2013, pp. 1-5.

- 2- Osama M Al-Habahbeh, Daryush Aidun, Pier Marzocca, Stochastic Simulation of a Power Generation Air Joint, Proceedings of IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Amman, Jordan, 6-8 Dec. 2011.
- 3- Osama Al-Habahbeh, Mark G. Stewart, Structural Reliability Analysis of Unreinforced Brick Masonry Walls Subject to Explosive Blast Loading, Proceedings of the First International Conference of Protective Structures (ICPS), Manchester, UK, Sep. – Oct. 2010.
- 4- O. M. Al-Habahbeh, D. K. Aidun, P. Marzocca, H. Lee, Integrated Physics-Based Approach for the Reliability Prediction of Thermal Systems, IMECE2009-13342, Proceedings of ASME International Mechanical Engineering Congress and Exposition, Florida, Nov. 2009, pp. 283-295.
- 5- O. M. Al-Habahbeh, D. K. Aidun, P. Marzocca, H. Lee, Reliability Prediction for a Thermal System Using CFD and FEM Simulations, IMECE2008-68365, Proceedings of ASME International Mechanical Engineering Congress and Exposition, Boston, MA, 2008, pp. 195-204.
- 6- Naser Al-Huniti, Osama Al-Habahbeh, Composite LPG Cylinders as an Alternative to Steel Cylinders: Finite Element Approach, Proceedings of International Conference on Manufacturing and Materials Processing (ICMM 2006), Kuala Lumpur, Malaysia, 2006, pp. 363-368.
- 7- Osama Al-Habahbeh, Naser Al-Huniti, Composite Pressure Vessels in Petroleum Industry: Status and Outlook, Proceedings of International Conference on Composite Science and Technology (ICCST/5), American University of Sharjah, UAE, 2005, pp. 401-406.

Books:

- "Advanced Manufacturing", STC Publications, 2019, Deposit No.: 2019/8/4001, The National Library, ISBN 978-9957-67-320-8 (Paperback), ISBN 978-9957-67-321-5 (E-book).
- "Introduction to Aviation Engineering", STC Publications, 2017, Deposit No.: 2017/8/4291, The National Library, ISBN 978-9957-67-044-3 (Print), ISBN 978-9957-67-045-0 (E-Book).

Patents:

- "Smart transportation system based on reconfigurable POD vehicles", Application no. 42034, Directorate of Industrial Property Protection, 24/08/2021.

University courses taught:

1. Automation
2. Computational fluid dynamics (CFD)
3. Dynamics
4. Engineering Materials
5. Integrated systems design
6. Introduction to Aeronautical engineering
7. Machine Design using Finite element method
8. Manufacturing Technology
9. Modeling and simulation
10. Numerical methods
11. Robotic systems
12. Statics
13. Strength of Materials
14. Vibrations

Professional consultant and trainer in the following areas:

- 1- Water Equipment for buildings
- 2- Water Instrumentation
- 3- Water networks

- 4- SCADA Systems
- 5- Tunnel boring machine (TBM)
- 6- Hybrid vehicles maintenance engineering
- 7- Electric vehicles maintenance engineering
- 8- Negotiation skills
- 9- Engineering contracting
- 10- Industrial studies
- 11- Pumps and compressors
- 12- Supply chain management
- 13- Inventory management
- 14- Procurement
- 15- Aircraft performance
- 16- Aircraft weight & balance
- 17- Dispatcher refresher course

Clients include:

- Qatar General Electricity & Water Corporation (Kahramaa)
- Dubai Municipality, UAE
- UJ Center for Consultation, Technical Services & Studies
- Kuwait Municipality
- Public Authority for Industry, Kuwait
- Kuwait Gulf Oil Company
- Saudi Arabian Chevron Inc.
- Saline Water Conversion Corporation, Saudi Arabia
- Philippine Airlines
- Iraqi Airways
- Royal Jordanian Airlines
- Jordan Airline Training and Simulation (JATS)

Software skills:

Moodle, Ansys Workbench, CFX, Matlab, Simulink, Isight, SpaceClaim, LS-Dyna, AutoCAD, MS-Word/Excel/PowerPoint/Project, Pro/Engineer, Pro/Mechanica, FORTRAN.

Honors and awards:

- Recognition Award, Arab Council for Training Students of Arab Universities, 2016.
- Honor Shield, Benevolent Fund for Outstanding Students, 2016.
- Honor Shield, Fayoum University, 2016.
- Project Award, 8th National Technology Parade, 2015.
- Volunteer Award, Jubilee Center for Excellence in Education, King Hussein Foundation, 2012.
- Instructor Award, UJ Student Union, 2012.
- URC Medal of Honor, National Educational Center for Robotics, 2011.
- Medal of Honor, Arab Open Robotics Championship, 2011.
- METS Award, King Abdulla II School for IT, 2011.
- Post-Doctoral Fellowship, University of Newcastle, 2010.
- GE Energy PhD Scholarship, Clarkson University, 2007-2010.
- Excellence in Service Award, Royal Jordanian Airline, 2004.
- BSc Scholarship, Jordan Armed Forces, 1990-1995.
- Ranked 2nd top student in Al-Shobak Secondary School Class of 1990.

Professional Services:

- Member of multiple university committees including: Student's Elections, Library, Standards & Specifications, Study plans & Currecculum, Academic advicing, Investment, Candidate selection, Accreditation, Research, Capstone projects, Graduate studies, Disciplinary committee.
- Teaching "Campus life and ethics" to School of Engineering students, 2016-2019.
- Editorial Board Member of Journal of Aeronautics & Aerospace Engineering, Madridge Publishers, 2018.
- Reviewed and evaluated multiple MS theses for University of Jordan and Al-Balqa Applied University.
- Editorial Board Member of Journal of Materials Science: Advanced Composite Materials, Whioce Publishing PTE. LTD., 2018.
- Delivered a lecture about Career planning to University students, Deanship of Student Affairs, 2016.
- Member of capacity raising committee, Accreditation and Quality Assurance Commission for Higher Education Institutions, Sep 2017.
- Member of Technical Program Committee (TPC), International Conference on Energy Development and Environmental Protection (EDEP), Guilin, China, Aug. 2017.
- Chair of the specifications committee for automotive lab and training center at the University of Jordan, with focus on hybrid and electric vehicles, Mar.2017.
- Supervisor of the Annual UJ Hajj Mission, 2016.
- Provided career advice for Secondary school top graduates, Zara Expo & Auditorium, 2016.
- Chairperson and member of several candidate screening committees.
- Member of the Editorial Board of the International Journal of Mechanical Engineering (IJME).
- Member of Technical Program Committee, 9'Th International Symposium on Mechatronics and its Applications (IEEE ISMA'13), Amman, Jordan, Apr.2013.
- Judge at the 6th and 7th National Robot Competitions, Jubilee Center for Excellence in Education, Feb. 2011, 2012.
- Advisor of a delta robot project that won 3rd place out of 18 competitors at METS 2011.
- Advisor of a maze robot project that won best program award at the Annual Robot Competition for Universities, Philadelphia University, Feb. 2011.
- Reviewed articles for multiple Journals such as: Journal of Aerospace Engineering, Journal of Electronic Materials (JEMS), Jordan Journal of Mechanical and Industrial Engineering, Journal of the Brazilian Society of Mechanical Sciences and Engineering (BMSE), International Journal of Power Electronics and Drive Systems (IJPEDS) and Journal of Ships and Offshore Structures.
- Contributed to the development of new designs for a number of major car manufacturers.

Presentations & Workshops:

- Workshop on Industrial innovation program, Amman Chamber of Industry, Oct. 2017.
- Represented University of Jordan at the annual meeting of the Arab Council for Training Students of Arab Universities (ACTSAU), May, 2016, Fayoum University, Egypt.
- Injaz Career Guidance Workshop, Dead Sea, Feb. 2016.
- Represented the University of Jordan at the annual meeting of the National Democratic Institute (NDI), 2015, PSUT, Amman.
- Represented University of Jordan at the annual meeting of the Arab Council for Training Students of Arab Universities (ACTSAU), May, 2015, JUST, Jordan.
- Poster: "Reliability Assessment Model for a Gas Turbine Intercooler Circuit Using CFD and FEM", presented at The 8th Annual Symposium on Environmental & Energy Systems, Syracuse, New York, Sep 2008.
- Presentation: "Thermal Model for Intercooler System Components, Presented to General Electric, Houston, Texas, May 2008.
- Poster: "Use of Reliability and Life Assessment Techniques to Analyze Corrosion & Fatigue in Intercooler Systems", presented at CAMP Annual Technical Meeting, Canandaigua, New York, May 2007.

- Presentation: “Thermal Model for Gas Turbine System Components”, presented to General Electric, Houston, Texas, Mar 2007.
- Workshop: Cost Index Optimization, Airbus, Toulouse, France, May 2004.
- Presentation: “Less Paper Cockpit (LPC) Feasibility Study”, Presented to CEO of Royal Jordanian Airlines, Amman, Jordan, Feb 2003.
- Workshop: “Fuel Monitoring System”, SITA, London, UK, Dec 2000.
- Workshop: “Less Paper Cockpit Integration”, Airbus, Toulouse, France, Sep 1999.

Short Courses taken:

- Training workshop on E-Learning and Blended Learning, UJ Accreditation and Quality Assurance Center, Mar, 2018.
- Smart research using big data, UJ Accreditation and Quality Assurance Center, Mar, 2018.
- Training workshops on Instructional design strategies, Effective teaching skills, Evaluation & testing, Rules & regulations and Academic work ethics, University of Jordan, Sep – Oct 2011.
- Faculty Development Workshop, Clarkson University, May 2007.
- Teaching Assistants Training, University of Toledo, Ohio, Aug 2006.
- Instructional Techniques, Royal Jordanian Training Center, Amman, Jordan, Feb 2000.
- Human Factors, Royal Jordanian Training Center, Amman, Jordan, Feb - Mar 1999.
- Internal quality auditing, Abu- Ghazaleh Quality Assurance, Amman, Jordan, Jun 1998.
- Customer care workshop, JATS, Amman, Jordan, Oct 2005.
- Flight operations management, AACO regional training center, Amman, Jordan, Feb 2005.
- Aviation security awareness Jun 2003.
- Performance Engineer, Airbus, Toulouse, France, 1998, 2000, 2002.
- Weight & balance engineer, Airbus, Amman, Jordan, Jun 2002.
- Performance Engineering Fundamentals, Boeing, Washington, June 2000.
- Performance Engineering Operations, Boeing, Washington, May 2000.
- Tourist guide course, Center for Consultation, Technical Services & Studies, Amman, Jordan, Jun – Jul 1995.

Funding:

- \$12,000 Internal and external funding for research and development activities.

Professional Associations Membership:

- Jordan Engineers Association (JEA)
- American Society of Mechanical Engineers (ASME)
- Engineering Society for Advancing Mobility (SAE International)
- Institute of Electrical and Electronics Engineers (IEEE)

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