

Mais Maher Aldwaik, PhD

Assistant Professor

maldwaik@philadelphia.edu.jo

Education

PhD: *2014 – 2019* *The Ohio State University* *Ohio, USA*

PhD in civil engineering/ structural engineering. Research topic is cost optimization of high rise structures subjected to seismic loading, using Neural Networks.

Master's degree: *2008 – 2012* *University of Jordan* *Amman, Jordan*

Masters of Civil Engineering, Thesis title: “Seismic performance evaluation of retrofit strategies for reinforced concrete frames: Steel bracing with shear links and column jacketing”

Bachelor's degree: *2002 – 2006* *University of Jordan* *Amman, Jordan*

Bachelor of Civil Engineering.

High school: *1999 – 2002* *Jubilee School* *Amman, Jordan*

King Hussein Foundation Scholarships were attained in *Jubilee school for gifted students*.

Publications

Haj-ahmed, M.; Aldwaik, M.M.; Abualnadi, D. Optimal Allocation of Phasor Measurement Units Using Particle Swarm Optimization: An Electric Grid Planning Perspective. *Energies* 2025, 18, 1225.

Alshannaq, A.M.; Haj-ahmed, M.A.; Aldwaik, M.; Abualnadi, D. Interline Power Flow Controller Allocation for Active Power Losses Enhancement Using Whale Optimization Algorithm. *Energies* 2024, 17, 6318.

Amezquita-Sanchez, Juan Pablo; Valtierra-Rodriguez, Martin; Aldwaik, Mais and Adeli, Hojjat. Neurocomputing in Civil Infrastructure. *Scientia Iranica A*, 23:6, pp. 2417-2428, 2016.

Aldwaik, Mais and Adeli, Hojjat. Cost Optimization of Reinforced Concrete Flat Slabs of Arbitrary Configuration in Irregular Highrise Building Structures. *Structural and Multidisciplinary Optimization*, 54:1, pp. 151-164, 2016.

Aldwaik, Mais and Adeli, Hojjat. Advances in Optimization of Highrise Building structures. *Structural and Multidisciplinary Optimization*, 50:6, pp. 899-919, 2014.

Aldwaik, Mais and Armouti, Nazzal. Analytical Case Study of Seismic Performance of Retrofit Strategies for Reinforced Concrete Frames: Steel Bracing with Shear Links Versus Column Jacketing. *Jordan Journal of Civil Engineers*, 7:1, pp. 26-43, 2013.

Work Experience

February 2020 – Present

Philadelphia University

Amman, Jordan

Assistant Professor. Basic responsibilities include teaching a requisite number of classes, providing guidance and supervision to students, providing academic support to Professors and other faculty members, conducting research and publishing papers in academic journals, writing proposals to secure funding for research.

Taught a variety of classes including: Reinforced concrete (I and II), Special topics in civil engineering, Construction materials, Strength of materials, Building construction and civil drawings, statistics, Design of highways, and Soil mechanics.

Serving as a chair of different committees in the civil engineering department such as تسكين (المؤهلات) that is required by higher education ministry, and ABET accreditation.

July 2020 – November 2020

e.construct

Dubai, UAE

Optimization specialist. Devise and implement mathematical optimization algorithms and statistical methods to develop structural optimization tools.

September 2015 – June 2016

The Ohio State University

Columbus, Ohio

Teaching and research assistant. Teaching assistant for intermediate steel design class, and research assistant for a PCI project conducted in Ohio State University for studying the current state of the precast parking garages and propose a better designing system for future garages.

Nov. 2006 – July 2011

e.construct

Amman, Jordan

<http://www.econstruct.ae>

Structural design engineer. Basic responsibility includes leading a team of 3 to 4 engineers in value engineering projects and full structural design projects. Most projects are:

- Precast projects (HCS's, Sandwich panels, band beams, Precast connections and construction sequence).
- Reinforced concrete projects (all types of structural RC systems and elements: Framed buildings, shear wall buildings, flat slabs, raft foundations)
- Full structural detailing and shop dwgs.
- 3D modeling and lateral load calculations (Wind, Seismic)

In some projects, I worked in:

- Structural masonry warehouses with light steel roof, and masonry cladding (light weight and ordinary weight), steel connections, PT slabs design.

Since the company has many international offices, we have worked in projects in UAE, KSA, Qatar, Kuwait, Jordan, Egypt, India and USA, hence worked based on both ACI and BS codes.

Software and trainings

Professional user of:

- AutoCAD.
- Microsoft Office.
- Etabs, SAFE, SAP.
- MIDAS (all of their design software).
- TEKLA detailing software <http://www.tekla.com/>
- Concise (PT members design).
- ROBOT (3D modeling).
- ADAPT prestressed concrete design software.

Trainings:

- *Oct '08* Leadership 6 sessions training, which was performed by mannaz <http://www.mannaz.com/> The training sessions were placed in Sharjah and Alexandria.
- TEKLA: 2 sessions (weekly session) training which was performed by a professional TEKLA engineers.
- Attendance in the following courses which was held by engineering training center (ETC):
 - *June '05* PROKON structural analysis.
 - *Feb. '06* Primavera Project Planner.

Scholarships

Awarded the MENA Scholarship Program (MSP) to attend the **Urban Management Tools for Climate Change (UMTCC) 2025** sustainability course at Erasmus University Rotterdam, Netherlands, gaining practical tools and strategies for climate-resilient urban development through expert-led sessions, hands-on exercises, and field visits.

Projects

Student graduation projects with focus on sustainability:

- Green concrete: the project investigated the partial replacement of Portland cement in concrete mixes, examining the effect on CO₂ emissions, cost, and workability.
- Sustainability of precast concrete: Designed a building using both conventional reinforced concrete and precast concrete, and compared their environmental impact and cost.

References

Name	Establishment	email	Occupation
Dr. Monther Obaid	Philadelphia University	mebaid2@philadelphia.edu.jo	Dean of faculty of engineering at Philadelphia university
Dr. Nazzal Armouti	University of Jordan	armouti@ju.edu.jo	Professor at the civil engineering department at JU Former thesis supervisor
Dr. Maher Tadros	e.construct USA LLC	maher.tadros@econstruct.us	Professor Emeritus at University of Nebraska– Lincoln Former work manager