Dr. MAHA ALQAM

Academic Rank: Professor
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EDUCATION

- **THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN**

  Ph.D., Civil Engineering (Structures). Spring 97 – Summer 03. GPA: 3.86/4.0.

  Ph.D. Dissertation: Probabilistic Based Design of FRP Structures

- **THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN**

  MS, Civil Engineering (Structures). Spring 95 – Fall 96. GPA: 3.83/4.0.

- **JORDAN UNIVERSITY OF SCIENCE & TECHNOLOGY, IRBID, JORDAN**

  BS, Civil Engineering (Structures). Fall 88 – Fall 93. Rank: 4th among graduated students of 1992/1993 academic year.

PROFESSIONAL EXPERIENCE

- **THE UNIVERSITY OF JORDAN, AMMAN, JORDAN June 2020 – PRESENT**

  Professor, Department of Civil Engineering (Structures).

- **THE UNIVERSITY OF JORDAN, AMMAN, JORDAN May 2013 – June 2020**

  Associate Professor, Department of Civil Engineering (Structures).

- **THE UNIVERSITY OF JORDAN, AMMAN, JORDAN SEP. 2006 – May 2013**

  Assistant Professor, Department of Civil Engineering (Structures).

- **THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN SEP. 2000 – AUG. 2003**

  Research Assistant

  Carried out analytical probabilistic-based design of structural members containing fiber-reinforced polymeric (FRP) composite material. The study resulted in the development of resistance factors in an LRFD format as a function of coefficient of variation of the appropriate material properties.

- **THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN AUG. 1999 – AUG. 2003**

  Teaching Assistant

  Taught MATLAB, Mechanical Desktop (AutoCAD) software packages, Statics and Dynamics.

- **THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN JAN. 1998 – MAY 2000**

  Research Assistant

  Conducted a theoretical NSF supported study involving the size and location of simulated defects in plates having anomalies consisting of piezogenerated elastic wave's propagation. The grant expired Sep. 1998.

- **THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN JAN. 1996 – JULY 1999**

  Computer Lab Assistant

  Was the lab assistant for students having various hardware and software problems.

- **THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TN OCT. 1996 – JUNE 1997**

  Research Assistant

  - Was the primary research assistant for the use of JAC2D (a two-dimensional finite element code for nonlinear quasi-static response of solids with conjugate gradient method).
  - Utilized my expertise in the use of JAS3D (a three-dimensional nonlinear finite element and multi-strategy iterative code for solid mechanics analysis).
  - Documented several example problems in matriculas mathematical detail.

PROFESSIONAL SERVICES

Referee for the Following Journals:

- ACI Structural Journal.
- ACI Materials Journal.
- Journal of Engineering Mechanics, ASCE.
- Construction and Building Materials.
- Dirasat; Research Journal for Natural and Engineering Sciences.

COURSES TAUGHT AT THE UNIVERSITY OF JORDAN

Undergraduate Courses:

- Statics

- Strength of Materials
- Structural Analysis
- Properties of Concrete
- Properties of Concrete Lab.
- Reinforced Concrete
- Final Year Project

Graduate Courses:

- Prestressed Concrete
- Bridge Engineering

PUBLICATIONS

Refereed Journals:

- Maha Alqam, Fadi M. Alkhairi and Antoine E. Naaman "Stress at Ultimate in Prestressed Unbonded Tendons: Assessment of Code Equations and Recommendation", *ACI Structural Journal*, Vol 118 No. 5 (2021), 177-187.
- Maha Alqam, Fadi Alkhairi and Antoine Naaman "An Improved Methodology for the Prediction of the Stress at Ultimate in Unbonded Internal and External Steel Tendons", *Arabian Journal for Science and Engineering*, Vol 45 No. 10 (2020), 7915-7954.
- Mohammad Alhawamdeh and Maha Alqam "Behaviour Assessment of Reinforced Concrete Columns Externally Rehabilitated with Carbon Fiber Reinforced Polymers (CFRP) Subjected to Eccentric Loadings", *Jordan Journal of Civil Engineering*, Vol 14 No. 1 (2020), 1-13.
- Maha Alqam and Fadi Alkhairi "Numerical and Analytical Behavior of Beams Prestressed with Unbonded Internal or External Steel Tendons: A State-of-the-Art Review", *Arabian Journal for Science and Engineering*, Vol. 44. No. 10 (2019), 8141-8170.
- Shereen K. H. Hassan, Mu`tasim S. Abdel-Jaber and Maha Alqam "Rehabilitation of Reinforced Concrete Deep Beams Using Carbon Fiber Reinforced Polymers (CFRP)", *Modern Applied Science*, Vol. 12. No. 8 (2018), 179-194.
- Hana' Al-Ghanim, Aya Al-Asi, Mu'tasim Abdel-Jaber and Maha Alqam "Shear and Flexural Behavior of Reinforced Concrete Deep Beams Strengthened with CFRP Composites", *Modern Applied Science*, Vol. 11. No. 10 (2017), 110-122.
- Nasim Shatarat, Hasan Kadkhuda, Mu'tasim Abdel-Jaber and Maha Alqam "Experimental investigation of reinforced concrete beams with spiral reinforcement in shear", *Construction and Building Materials,* Vol. 125 (2016), 585-594.
- Mohammad K. Alkam and Maha Alqam "Prediction of the Service Life of a Reinforced Concrete Column under Chloride Environment", *Advances in Materials Science and Engineering,* Vol. 2015.

- Maha Alqam and Mohammad K. Alkam “Temperature and Moisture Distribution Inside a Circular Concrete Column during the Early Stages of Hydration”, *Canadian Journal of Civil Engineering,* Vol. 41. No. 6 (2014), 559-568.
- Maha Alqam “Transient Chloride-Ion Diffusion in a Homogeneous Concrete Column”, *Arabian Journal for Science and Engineering*, *AJSE*, Vol. 39. No. 5 (2014), 3633-3640.
- Maha Alqam, Ahmad Jamrah, Bayan Abd Al-Hafith, Razan Al-Zubi and Nawar Al-Shamar “Fresh and Hardened Properties of Sustainable Concrete Using Recycled Household Greywater”, *Arabian Journal for Science and Engineering, AJSE*, Vol. 39. No. 3 (2014), 1701-1708.
- Maha Alqam “Potential Reuse of Electric-Arc Furnace Dust (EAFD) in Concrete”, *Jordan Journal of Civil Engineering*, Vol. 6. No. 2 (2012), 174-185.
- Maha Alqam, Ahmad Jamrah and Haya Daghlas “Utilization of Cement Incorporated with Water Treatment Sludge”, *Jordan Journal of Civil Engineering*, Vol. 5. No. 2 (2011), 268-277.
- Malek Abu Rumman, Mohammad Hiyassat, Bashar Alsmadi, Ahmad Jamrah and Maha Alqam "A surface water management model for the integrated Southern Ghor project, Jordan", *Construction, Innovation: Information, Process, Management,* Vol. 9. No. 3 (2009), 298-322.
- Maha Alqam, Richard M. Bennett and Abdul-Hamid Zurieck “Probabilistic Based Design of Concentrically Loaded Fiber-Reinforced Polymeric Compression Members”, *Journal of Structural Engineering*, *ASCE*, Vol. 130. No. 12 (2004), 1914-1920.
- Maha Alqam, Richard M. Bennett and Abdul-Hamid Zurieck “Three-Parameter vs. Two-Parameter Weibull Distribution for Pultruded Composite Material Properties”, *Composite Structures*, Vol. 58 (2002), 497-503.

Refereed Conferences:

Maha AL-LASASSMEH, Mu’tasim Abdel-Jaber, Maha Alqam and Robert G. Beale “Second Order Numerical Analysis of Full-Scale Tube and Fitting Scaffold Structures with Non-Linear Moment-Curvature: Comparison of 2D AND 3D Models”, *Eighth International Conference on Steel and Aluminum Structures*, Hong Kong, China, December 7 – 9, 2016.

REPORTS

“Determination of Material Property Characteristic Values of Fiber-Reinforced Polymeric Composites”. Prepared for Federal Highway Administration (U.S.A.) (January 2003).

THESIS SUPERVISION

- “Flexural Behavior of Reinforced Concrete Beams using Recycled Household Greywater,” Master Thesis by Muath Al-Shataiwi, Department of Civil Engineering, The University of Jordan, Spring 2021.

- “Shear Behavior of Reinforced Concrete Beams using Recycled Household Greywater,” Master Thesis by Wasim Al Omari, Department of Civil Engineering, The University of Jordan, Spring 2021.
- “Flexural Strengthening of Reinforced Concrete Beams with Variable Compressive Strength Values using Externally Bonded Carbon Fiber Plates,” Master Thesis by Huda Al-Saoud, Department of Civil Engineering, The University of Jordan, Spring 2021.
- “Shear Strengthening of Reinforced Concrete Beams with Variable Compressive Strength Values using Externally Bonded Carbon Fiber Plates,” Master Thesis by Rawan Al-Shamayleh, Department of Civil Engineering, The University of Jordan, Spring 2021.
- “Slenderness Effects on Eccentrically Loaded Reinforced Concrete Columns Containing Recycled Coarse Aggregates ,” Master Thesis by Laith Zayed, Department of Civil Engineering, The University of Jordan, Spring 2020.
- “Shear Behavior of Reinforced Concrete Deep Beams Containing Recycled Coarse Aggregate ,” Master Thesis by Ahmad Al- Hawajreh, Department of Civil Engineering, The University of Jordan, Spring 2020.
- “Properties of Sustainable Concrete Mixes Containing Recycled Coarse Aggregate,” Master Thesis by Mervat Abu Rumman, Department of Civil Engineering, The University of Jordan, Spring 2019.
- “Structural Behavior of Reinforced Concrete Beams Containing Recycled Coarse Aggregates,” Master Thesis by Iman Alsabaileh, Department of Civil Engineering, The University of Jordan, Spring 2019.
- “Rehabilitation of Fire Damaged Slender Reinforced Concrete Columns Using Carbon Fiber Reinforced Polymers (CFRP),” Master Thesis by Abdulaziz Alazemi, Department of Civil Engineering, The University of Jordan, Spring 2019.
- “Rehabilitation of Fire Damaged Reinforced Concrete Deep Beams Using Carbon Fiber Reinforced Polymers, Master Thesis by Abdallah Alqudah, Department of Civil Engineering, The University of Jordan, Spring 2019.
- “Rehabilitation of Pre-Loaded Slender Reinforced Concrete Columns Externally Confined with Carbon Fiber Reinforced Polymers (CFRP),” Master Thesis by Mohammad Alkhawaldeh, Department of Civil Engineering, The University of Jordan, Fall 2018.
- “Rehabilitation of Short Reinforced Concrete Columns Externally Confined with Carbon Fiber Reinforced Polymers (CFRP) Subjected to Eccentric Loadings,” Master Thesis by Mohammad Al-Hawamdeh, Department of Civil Engineering, The University of Jordan, Spring 2016.
- “Rehabilitation of Fire Damaged Short Reinforced Concret Columns Externally Confined with Ccarbon Fiber Reinforced Polymers (CFRP),” Master Thesis by Aya Alkawaldeh, Department of Civil Engineering, The University of Jordan, Spring 2016.
- “Slenderness Effects on CFRP-Confined Reinforced Concrete Columns Subjected to Eccentric Loadings,” Master Thesis by Radwan Alolaimat, Department of Civil Engineering, The University of Jordan, Spring 2016.

- "Axial Compressive Strength for Short Concrete Columns Reinforced with Reused Steel and Wrapped with Carbon Fiber Reinforced Polymers (CFRP)," Master Thesis by Hashem Abu Kwek, Department of Civil Engineering, The University of Jordan, Spring 2016.
- "Rehabilitation of Short Reinforced Concrete Columns Externally Confined with Carbon Fiber Reinforced Polymers (CFRP)," Master Thesis by Ahmad Al-Tarawneh, Department of Civil Engineering, The University of Jordan, Spring 2016.
- "Shear Strengthening of Reinforced Concrete Deep Beams Using Carbon Fiber-Reinforced Polymer Composites," Master Thesis by Hana' Al-Ghanim, Department of Civil Engineering, The University of Jordan, Fall 2015.
- "Flexural Strengthening of Reinforced Concrete Deep Beams Using Carbon Fiber Polymers," Master Thesis by Aya Al-Asi, Dept of Civil Engineering, The University of Jordan, Fall 2015.

MEMBERSHIPS AND ASSOCIATIONS

- Member of the Jordanian Engineering Association (JEA).
- Technical Committee Member for the Second European and Mediterranean Structural Engineering and Construction Conference, Beirut, Lebanon, July 23-28, 2018.

COMPUTER SKILLS

Expert knowledge in Windows 10, Microsoft Office Applications, and Adobe Acrobat Professional. Computer skills includes programming using FORTRAN, VISUAL BASIC and MS Excel (macro programming and spreadsheet numerical analysis). Knowledgeable in computer aided analysis and design of structures, including (but not limited to) the following software packages:

- JAC2D (a two-dimensional nonlinear finite element code), JAS3D (a three-dimensional nonlinear finite element code), and FASQ (a mesh generator).
- COSMOS, GTSTRUDL, STAAD3D, and SAP2000.
- MATLAB, AutoCAD, Mechanical Desktop (AutoCAD), Mathematica, and SAS.

LANGUAGES

- Arabic (Mother Tongue)
- English