Dr. Ayah A. Alkhawaldeh, PhD.

Civil/Structural Engineering

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Dr. Ayah A. Alkhawaldeh is an expert structural engineer. She earned a PhD in structural engineering from the Jordan University of Science and Technology (JUST) in August 2022. She specialized in assessing the structural performance of reinforced concrete elements exposed to environmental attacks, particularly fire accidents. Also specialized in the nonlinear analysis of structural members using finite element programs (i.e., ABAQUS). In her research area, Dr. Alkhawaldeh has conducted in-depth studies on the repair of deficient reinforced concrete members using advanced composite materials, computational mechanics, and data modeling. Dr. Alkhawaldeh has gained valuable experience as a structural engineer on funded projects, with extensive expertise in overseeing construction processes, collaborating with multiple agencies to devise optimal engineering solutions, and managing diverse construction and rehabilitation processes. Recently, Dr. Alkhawaldeh has focused on new research topics in sustainability, green concrete materials, and green constructions. Currently, she is working on research on 3D printing techniques. In addition to research, teaching has been an important part of her academic training. Dr. Alkhawaldeh has been teaching a variety of courses such as solid mechanics, structural analysis and reinforced concrete design, concrete behavior, materials science and earthquake engineering.

Dr. Ayah Alkhawaldeh is the first graduate of JUST's own Civil Engineering Ph.D. Program in Structures.

EDUCATION

2022 **Ph.D. in Civil engineering/Structures**, Jordan University of Science and Technology, Irbid-Jordan
GPA: **4.0/4.0** Rate: (**Distinguished**). Rank: **1/6**
Dissertation "Strengthening of Heat-Damaged Reinforced Concrete Beam-Column Joints using Carbon Fiber Reinforced Polymers."

2016 **M.Sc. Civil engineering/Structures**, The University of Jordan, Amman-Jordan, School of Engineering
GPA: **3.92/4**. Rate: (**Excellent**). Rank: **1**
Thesis "Rehabilitation of Fire Damaged Short Reinforced Concrete Columns Externally Confined with Carbon Fiber Reinforced Polymers (CFRP)"

2013 **B.Sc. Civil engineering**, Al-Balqa'a Applied University "Faculty of Engineering Technology", Amman-Jordan
GPA: **3.65/4.** Rate: (**Excellent**). Rank: **1**
Graduation project: redesign of "EDGO OFFICE BUILDING" in Al-Abdali city-Amman-Jordan.

2009 The General Secondary Education (Tawjihi), Science branch, average "**90.8%**", Al-Wesam Golden Educational School, Amman-Jordan

PROFESSION AFFILIATION

Jordanian Engineers Association (2013-present).

AWARDS

Practice Academic Work License from the Ministry of Higher Education and Scientific Research at Jordan.

Ph.D. fully funded scholarship from Jordan University of Science and Technology (2017-2021).

M.Sc. fully funded scholarship from Scientific Research Support Fund at the Ministry of Higher Education & scientific research-Jordan (2014-2016).

B.Sc. full scholarship granted by the Royal Hashemite Court of Jordan (2009-2013).

EMPLOYMENT HISTORY

- **Research Experience** (2015-Present)

My research experience during my **M.Sc.** study at the University of Jordan, **Ph.D.** study at Jordan University of Science and Technology, and **post-Ph.D.** work at the American University of Madaba (AUM) and Jerash University (JPU) includes:

- Leading research groups with international professors from different countries.
- Collaborated with international researchers from various countries, including Egypt, Saudi Arabia, UAE, etc.
- Focused on advancing structural engineering through innovative materials and strengthening techniques.
- Published extensively in high-impact journals, including: Construction and Building Materials, Engineering Structures, Structures, Case Studies in Construction Materials, Results in Engineering, Arabian Journal for Science and Engineering, etc.
- Doctoral research investigated the cyclic response of heat-damaged beam-column joints strengthened with CFRP, leading to novel strengthening schemes for reinforced concrete structures.
- Contributed to **sustainability** research by assessing the **life cycle performance** of **green concrete materials** and alkali-activated binders.
- Explored 3D printing techniques and composite materials for lightweight, high-performance, and environmentally friendly structural solutions.
- Expertise in computational mechanics and data modelling, employing finite element analysis tools such as ABAQUS to optimize structural performance.
- Aims to bridge the gap between experimental and computational studies to foster innovations that enhance the durability and sustainability of civil infrastructure.

- **Teaching experience** (2016-Present)

In my teaching experience, I focus on creating a supportive and inclusive community by welcoming diversity, encouraging teamwork, and using innovative teaching methods. I am committed to providing opportunities that empower students and colleagues, helping them reach their potential. I promote fairness and equality in all my interactions, allowing everyone to grow and succeed. The following are the universities that I worked in after earning my M.Sc. degree, during my Ph.D. study, and after holding my Ph.D.

October 2025 to present	**Assistant Professor** and **Head of Civil Engineering Department** at **Jerash University** (**JPU**), "Faculty of Engineering", Jerash-Jordan.

- Completed an introductory training program on Learning Management Systems (LMS), focusing on the principles and applications of electronic learning platforms. The program was conducted on November 1, 2025.
- **Diploma Equivalency and Admissions Processing:** Reviewed and processed academic equivalency and transfer cases for diploma-holding students seeking admission into the B.Sc. program from various Jordanian and Arab educational institutions.
- **Department Council Minutes Preparation:** Prepared, documented, and maintained the official minutes of departmental council meetings, ensuring accurate records and formal communication of decisions and action items.
- **Accreditation Committee Documentation and Compliance:** Prepared meeting minutes and coordinated accreditation procedures and documentation related to the national accreditation requirements for the Civil Engineering program.
- **Curriculum and Course Planning:** Developed and updated study plans and course structures for civil engineering subjects in alignment with academic standards and program outcomes.

- Teaching a range of courses for civil engineering students across **multiple modalities.**
- Supervising **graduation projects for B.Sc. students** in civil engineering.

October 2022 to September 2025 — **Assistant Professor** at the **American University of Madaba** (**AUM**), "Faculty of Engineering", Madaba-Jordan.

- Preparing weekly reports for the engineering courses taught.
- Teaching a range of courses for civil, architectural, and mechanical engineering students across **multiple modalities**, including **face-to-face**, **blended (combining in-person and online lectures with weekly activities)**, and **fully online formats**.
- Supervising **graduation projects for B.Sc. students** (*11 students*) in civil engineering. Projects titles: 1) Structural Design of a Commercial Building, 2) Construction Management of a Private Residence, 3) Structural Design of a Private Villa, 4) Structural Design of a Residential Building, 5) Quantity Surveying and Cost Estimation of a School.
- Organizing a **scientific trip** to the **facilities and laboratories of Jordan University of Science and Technology (JUST)**. The trip included visits to various laboratories, such as the **Construction materials**, **Structural, Environmental Engineering**, and **Nanotechnology Laboratories**, as well as the **Center of Excellence for Innovative Projects**. The students gained valuable insights into advanced testing methods, innovative technologies, and interdisciplinary research.
- Advising and guiding students to enhance their talents, abilities, and knowledge.
- Incorporating well-defined and attainable learning outcomes into course syllabus design.
- Organizing a Scientific Day for Civil Engineering Students at the American University of Madaba has a title of "Technically Speaking," featuring guest speakers from leading engineering companies:
  1. Eng. Samer Al-Aker from Sakkab Group–KOSTER, who delivered a valuable presentation on "Structural Dampness and Roofing".
  2. Eng. Taher Ghanem from Technik Engineering Industries, who presented on "Mechanical Facade Systems".

  The event contributed significantly to students' professional development and fostered strong connections between academia and industry.

March 2023 to March 2024 — Full-time Lecturer at Arab University College of Technology (**AUCT**), "Faculty of Engineering ", Amman-Jordan.

October 2021 to June 2022 — Part-Time Lecturer at Al-Ahliyya Amman University (**AAU**), "Faculty of Engineering ", Amman-Jordan for the first and second semester.

December 2017-August 2021 — Part-Time Lecturer and Researcher at Jordan University of Science and Technology (**JUST**), Irbid-Jordan.

- Leading research initiatives and coordinating research groups.
- **Receiving complete funding for the Ph.D. dissertation research project (13000 JOD).**
- **Designing and creating an electric furnace for experimental testing of reinforced concrete elements in the structural laboratory.**
- Teaching a range of civil engineering courses across multiple modalities.
- Contributed to conference preparation committees through active participation in planning meetings.

- Attending validation and accreditation panels (e.g., ABET, NECHE).

July 2017 to August 2017	Part Time Lecturer at Al-Ahliyya Amman University (**AAU**), "Faculty of Engineering ", Amman-Jordan.
June 2016 to June 2017	Full-time Lecturer at Al-Balqa'a Applied University (**BAU**), "Faculty of Engineering Technology", Amman-Jordan.

- **Industrial experience**

June 2014-August 2014	Worked as a quantity surveying engineer at Iratec Engineering Company in Wadi Saqra, Amman, Jordan.

COURSES TAUGHT

The following is a list of courses Dr. Alkhawaldeh has taught throughout her academic work at various higher education institutions.

University/Institute	Courses
Jerash University (JPU)	Strength of Materials Reinforced Concrete (1) Reinforced Concrete (2) Working on Jordanian Accreditation
American University of Madaba (AUM)	**Bachelors' Degree courses** Statics (for Civil and Mechanical Engineering) Mechanics of Materials (for Civil and Mechanical Engineering) Structural Systems I and Structural Systems II (for Architectural Engineering) Structural Analysis 1 Structural Lab Reinforced Concrete (1) Reinforced Concrete (2) Steel Structures Advanced Structural Analysis and Design Earthquake Engineering Pre-Stressed Concrete Design Specifications and Quantity Surveying Construction Materials Construction Materials Lab Special Topics in Structural Engineering (Bridges Engineering) Environmental Engineering Environmental Engineering Lab Design of Environmental and Waste Water Systems Geotechnical Engineering Graduation projects supervision Worked on ABET accreditation and Neche
Arab University College of Technology (AUCT)	**Bachelors' Degree courses** Structural Analysis 2 Reinforced Concrete Design II Design of Steel Structures Graduation project supervision **Diploma Degree courses** Basics of structural design
Al-Ahliyya Amman University (AAU)	**Bachelors' Degree courses** Reinforced Concrete Design I

	Design of Steel Structures Graduation project supervision Worked on ABET accreditation
Jordan University of Science and Technology (JUST)	**Bachelors' Degree courses** Strength of materials Structural Analysis I Structural Analysis II Materials of Construction Lab Fluid Mechanics and Hydraulics Lab Environmental Engineering Lab Worked on ABET accreditation
Al-Ahliyya Amman University (AAU)	**Bachelors' Degree courses** Bridges Engineering Structural Analysis I
Al-Balqa'a Applied University (BAU)	**Bachelors' Degree courses** Strength of Materials Structural Analysis I Structural Analysis II Reinforced Concrete Design I Reinforced Concrete Design II Pre-stressed Concrete Design **Diploma Degree courses** Structural Analysis Structural Engineering Materials Computer Applications in quantity surveying

ACADEMIC ENGAGEMENTS

1. **External Graduation Project Evaluator** — Al-Zaytoonah University of Jordan. Served as an external examiner for undergraduate civil engineering graduation projects on June 22, 2024.
2. **Guest Lecturer** — Middle East University. Delivered two voluntary lectures to undergraduate civil engineering students on Reinforced Concrete Design and Bridge Engineering, 2025.

TEACHING GOALS AND PHILOSOPHY

- Promote critical thinking, independent learning, and student engagement.
- Bridge theory and practice through hands-on labs, real-world applications, and design projects.
- Teach a broad range of structural and civil engineering courses with interdisciplinary integration.
- Embed sustainability and innovation into engineering education.
- Incorporate research into teaching for relevance and depth.
- Use varied teaching methods to support diverse learning styles.
- Mentor students through graduation projects and academic development.
- Commit to continuous improvement and excellence in teaching.

ADVANCED GRADUATE COURSES Dr. AYAH TOOK DURING HER M.SC. AND PH.D. IN CIVIL & STRUCTURAL ENGINEERING STUDY

- **Ph.D. courses**

1. Advanced Finite Element Analysis (CE904) – 3 credit hours.
2. Mechanics of Composite Materials (CE917) – 3 credit hours.
3. Advanced Prestressed Concrete (CE908) – 3 credit hours.
4. Special Topics in Structural Engineering** Stability of Structures (CE920) – 3 credit hours.
5. Seminar in Civil Engineering (CE909)
6. Theory of Elasticity (CE902) – 3 credit hours.
7. Advanced Analysis and Design of Bridge (CE910) – 3 credit hours.
8. Sustainable Construction Materials and Technology (CE905) – 3 credit hours.
9. Seismic Resistant Design (CE918) – 3 credit hours.
10. Advanced Behavior of Reinforced Concrete Structures (CE919) – 3 credit hours.
11. Repair and Rehabilitations of Structures (CE915) – 3 credit hours.
12. Computational Mechanics (CE906)– 3 credit hours.
13. Operations Research (CE916) – 3 credit hours.
14. Advanced Concrete Technology (CE721) – 3 credit hours.

- **M.Sc. courses**

1. Matrix Structural Analysis – 3 credit hours.
2. Prestressed Concrete – 3 credit hours.
3. Finite Element Methods – 3 credit hours.
4. Scientific Research Methodology – 1 credit hours.
5. Advanced Mechanics of Materials – 3 credit hours.
6. Plastic Design of Steel Structures – 3 credit hours.
7. Advanced Numerical Methodology – 2 credit hours.
8. Bridge Engineering – 3 credit hours.
9. Structural Stability – 3 credit hours.

TRAINING COURSES

1. **3D Printing Fundamentals and Practical Applications**, organized by **IEEE BAU JOINT**, covering 3D printing technologies and materials, digital modeling and slicing, printer setup, troubleshooting, and practical project applications, with a total of 3 training hours on December 30, **2025**.
2. **Empowering Engineers for the Digital & Green Transition**, delivered by the **Engineers Academy for Training & Development** as part of the **HINTS project**, with a total of 3 training hours on November 29, **2025**.
3. **Autodesk Revit Structure**, held at the **Engineers Academy for Training and Development (Jordan Engineers Association)**, with 30 training hours during the period of October 13 – November 15, **2025**.
4. Successfully completed **32** training **hours** within the **Water Diplomacy** related course entitled: **A Theory-Practice Synthesis for Actionable Outcomes**, which was organized by the **Water Diplomacy Center**, at Amman Marriott Hotel in Jordan, from the period of the 2nd to the 5th of June 2024. In witness whereof, I have been awarded a Certificate of Completion is hereby awarded on Wednesday, the 5th of **June 2024**.
5. Three **English language courses** (levels 7, 8, and 9 of **42** training hours for each course), which were held at the modern language center in Amman, Jordan, **2022**.
6. **Introduction to Buildings Earthquake Design**, which was held at the **Jordan Engineers Association**, had **15** training hours during the period of September 27–October 1st, **2020**.
7. **Introduction to the Rehabilitation of Old Buildings to Resist Earthquakes**, which was held at the **Jordan Engineers Association**, had **15** training hours during the period of January 20–24, **2019**.
8. **GRE** exam with score **161/170** in the **Quantitative Reasoning** section.

COMPUTER SKILLS

1. ABAQUS (nonlinear finite element analysis software)
2. ANSYS (nonlinear finite element analysis software)
3. Microsoft Office (Word, PowerPoint, Excel, etc.)
4. TOPSIS
5. AutoCAD
6. REVIT
7. VOSviewer
8. CSiBridge
9. PROKON

LINKS

Scopus: https://www.scopus.com/authid/detail.uri?authorId=57218135709

ORCID Profile: https://orcid.org/0000-0002-4204-4189

Google Scholar: https://scholar.google.com/citations?user=BedPDxgAAAAJ&hl=en

Research Gate Profile: https://www.researchgate.net/profile/Ayah-Alkhawaldeh

Web of Science-Clarivate: https://www.webofscience.com/wos/author/record/JRZ-0852-2023

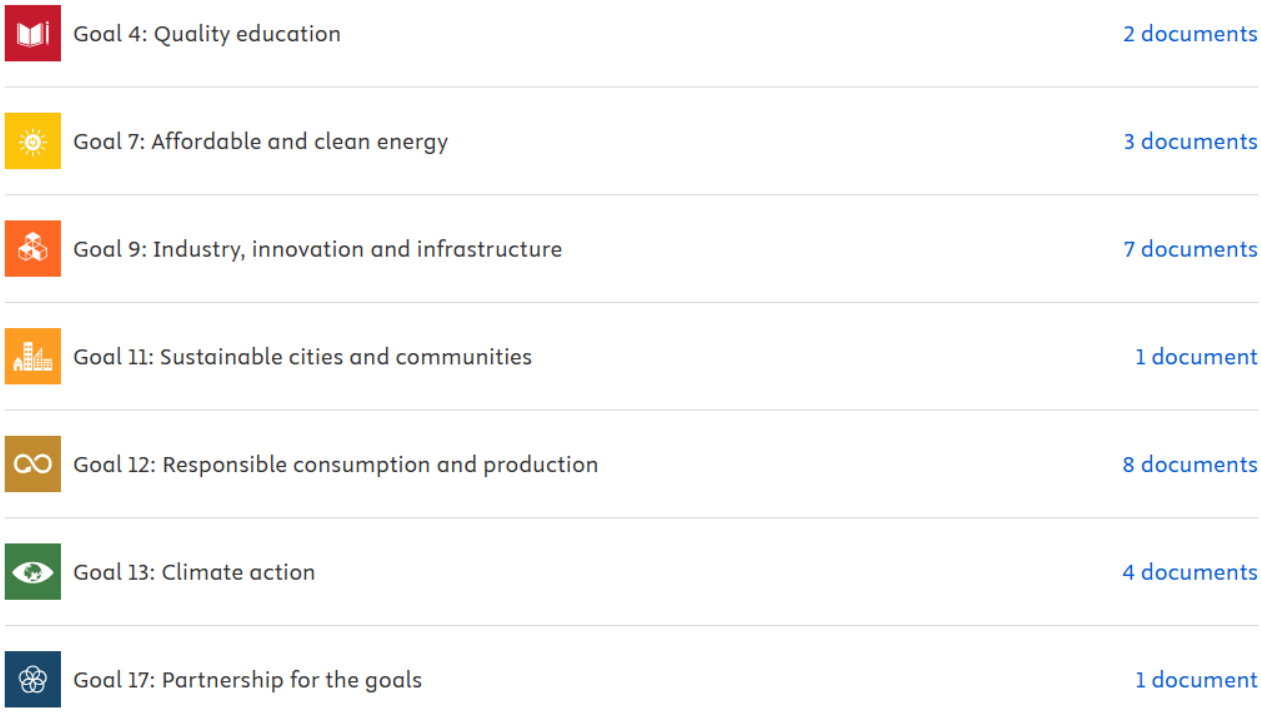
CONFERENCES

3. Participated as an author, presenter, and session chair in the "**International Conferences on Digital Technology Driven Engineering 2025**" **ICDTDE 2025**. That was held online in virtual mode, organized by Jordan University of Science and Technology (Jordan), the National Technical University of Athens (Greece), and the National and Kapodistrian University of Athens (Greece), December 18-20, 2025.
4. Participated as an author and presenter in the "**ADDitively Manufactured OPTimized Structures by Means of Machine Learning**" **ADDOPTML 2024**. That held at the Faculty of Engineering at the Jordan University of Science and Technology in Irbid, Jordan, October 01-03, 2024.
5. Participated as an author and presenter in "**The 14th International Conference on Engineering, Project, and Production Management (EPPM 2024)**". That held at the Faculty of Engineering and Technology at Al-Zaytoonah University in Amman, Jordan, September 18-19, 2024.
6. Participated as an exhibitor with **APL Technologies** in **SOFEX,** which is organized by the Jordanian Armed Forces and held in Aqaba, Jordan, 3-5 September, 2024.
7. Participated as an author and presenter in the "**The 10th International Conference on Social Networks Analysis, Management and Security**" **SNAMS-2023, IEEE**. That held in Abu-Dhabi, UAE, November 21-24, 2023.
8. Participated as an author and Presenter in the "**3rd Global Conference On POLYMERS, PLASTICS and COMPOSITES**" **PPC-2023** in its virtual (oral) form. That held in Barcelona, Spain, September 11-12, 2023.
9. Participated as an exhibitor with **APL Technologies** in the second edition of **the Artificial Intelligence in Defense Technologies and Cyber Security Exhibition and Conference** (**AIDTSEC-2023**), which was organized by **SOFEX** Jordan and held in the Dead Sea, Jordan, on September 4–5, 2023.
10. Participated as an author and Presenter in **the 18th edition of the SICB "Sustainability and Cutting-Edge Business Technologies" SICB 2023.** That held in AL-Zaytoonah University of Jordan, Amman-Jordan, 22-24 May, 2023.
11. Participated as an author and Presenter (online attendance) in the **International Arab Conference on Information Technology "ACIT", IEEE,** that held in Al Ain University Campus, Abu Dhabi-UAE, 22-24 November, 2022.
12. Participated as an exhibitor with **APL Technologies** in **SOFEX,** which is organized by the Jordanian Armed Forces and held in Aqaba, Jordan, 1-3 November, 2022.

13. Participated as an author and Presenter in the **3rd International Conference "Coordinating Engineering for Sustainability and Resilience" CESARE'22** that held in the Jordan University of science and technology, Irbid-Jordan, 6-9 May, 2022.
14. Participated as an exhibitor with **APL Technologies** in the first edition of **the Artificial Intelligence in Defense Technologies and Cyber Security Exhibition and Conference** (**AIDTSEC-2021**), which was organized by **SOFEX** Jordan and held in the Dead Sea, Jordan, on October 27–28, 2021.
15. Participated as an author and Presenter in the **1st International Conference on Optimization-Driven Architectural Design (OPTARCH 2019)** that held in Amman-Jordan, 5-7 Nov, 2019.
16. Attended the **14th Arab Structural Engineering Conference** that held in the Jordan University of science and technology, Irbid-Jordan, 12-15 April, 2018.
17. Attended **The Seventh Jordanian International Civil Engineering Conference (JICEC 07)** that held in Amman-Jordan, 9-11 May, 2017.

SUSTAINABLE DEVELOPMENT GOALS (SDG's)

My research publications align with and support the achievement of the United Nations Sustainable Development Goals (**SDGs**), with particular focus on sustainability, resilient infrastructure, and environmental protection. The following goals are achieved by my published research:



PEER REVIEW CERTIFICATES

1. **Introduction to the Certified Peer Reviewer Course**. Presented by Priyanka Kalra, on Friday 27 September, 2024
2. **What to expect from the Certified Peer Reviewer Course?** Presented by Bahar Mehmani, PhD, Christopher Tancock, on Friday 27 September, 2024.
3. **What is peer review? Why peer review?** Presented by Christopher Tancock, on Friday 27 September, 2024.
4. **Models of peer review.** Presented by Bahar Mehmani, PhD, on Friday 27 September, 2024.

PEER REVIEW ACTIVITIES

Invited reviewer for:

1. The **Practice Periodical on Structural Design and Construction** Journal, Source: American Society of Civil Engineers (**ASCE**).
2. The **Construction and Building Materials** journal, Source: **Elsevier**.
3. The **Engineering Structures** journal, Source: **Elsevier**.
4. The **Structures** journal, Source: **Elsevier**.
5. The **Engineering applications of artificial intelligence** journal, Source: **Elsevier**.
6. The **Journal of Asian Architecture and Building Engineering**, Source: **Taylor & Francis**.
7. The **Innovative Infrastructure Solutions** journal, Source: **Springer**.
8. **Springer Nature**.
9. The **Polytechnic Journal**, Source: Erbil Polytechnic University (**EPU**).

PUBLICATIONS

➢ Published Papers in the Refereed Journals (Scopus indexed)

1. Mlybari, E. A., Ghalla, M., Hu, J. W., Bazuhair, R. W., Altobgy, M. A., & **Alkhawaldeh, A. A**. (2025). Value-oriented SHCC-based strengthening of masonry walls with openings: integration of glass fiber mesh and steel bars for seismic risk mitigation in construction. Case Studies in Construction Materials, e05511. https://doi.org/10.1016/j.cscm.2025.e05511
2. **Alkhawaldeh, A. A.**, Ghalla, M., Elsamak, G., Badawi, M., Mlybari, E. A., & Shaaban, I. G. (2025). Shear performance of RC beams strengthened via sustainable NSM-SHCC strips reinforced by high strength steel wires. In Engineering Structures (Vol. 334, p. 120120). Elsevier BV. https://doi.org/10.1016/j.engstruct.2025.120120
3. Elsamak, G., **Alkhawaldeh, A. A.**, Badawi, M., Alshammari, E., Tawfik, T. A., & Ghalla, M. (2025). Externally bonded and anchored engineered cementitious composite and glass fiber mesh strips for enhancing defected RC beams in shear. In Case Studies in Construction Materials (Vol. 22, p. e04385). Elsevier BV. https://doi.org/10.1016/j.cscm.2025.e04385
4. **Alkhawaldeh, A. A.**, Alhassan, M., Betoush, N., Alkhawaldeh, M., & Al-Huthaifi, N. (2024). Response of Overhanging RC Beams Strengthened with Various Schemes of Externally Bonded CFRP Strips. In Practice Periodical on Structural Design and Construction (Vol. 29, Issue 4). American Society of Civil Engineers (ASCE). https://doi.org/10.1061/ppscfx.sceng-1587
5. **Alkhawaldeh, A. A.**, Judah, H. I., Shammout, D. Z., Almomani, O. A., & Alkhawaldeh, M. (2024). Sustainability Evaluation and Life Cycle Assessment of Concretes Including Pozzolanic By-Products and Alkali-Activated Binders. In Results in Engineering (p. 102569). Elsevier BV. https://doi.org/10.1016/j.rineng.2024.102569
6. **Alkhawaldeh, A. A.**, & Al-Rousan, R. Z. (2024). The action of heated RC joints strengthened with a novel strategy combined CFRP and SSEMSM under a quasi-static cyclic load. In Engineering Structures (Vol. 309, p. 118092). Elsevier BV. https://doi.org/10.1016/j.engstruct.2024.118092
7. Alhassan, M., **Alkhawaldeh, A.**, Betoush, N., Sawalha, A., Amaireh, L., & Onaizi, A. (2024). Harmonizing smart technologies with building resilience and sustainable built environment systems. In Results in Engineering (Vol. 22, p. 102158). Elsevier BV. https://doi.org/10.1016/j.rineng.2024.102158
8. **Alkhawaldeh, A. A.**, & Al-Rousan, R. Z. (2024). Optimizing Cyclic Response of Non-Ductile RC Joints Subjected to Heat Using Stainless-Steel Expanded Metal Sheet Mesh. In Arabian Journal for Science and Engineering. Springer Science and Business Media LLC. https://doi.org/10.1007/s13369-024-08893-y
9. Alhusban, M., Alhusban, M., & **Alkhawaldeh, A. A.** (2023). The Efficiency of Using Machine Learning Techniques in Fiber-Reinforced-Polymer Applications in Structural Engineering. In Sustainability (Vol. 16, Issue 1, p. 11). MDPI AG. https://doi.org/10.3390/su16010011

10. Al-Rousan, R. Z., & **Alkhawaldeh, A. A.** (2023). Experimental cyclic response of heat-damaged RC beam-column joints strengthened with CFRP strings. In Structures (Vol. 57, p. 105169). Elsevier BV. https://doi.org/10.1016/j.istruc.2023.105169

11. **Alkhawaldeh, A. A.**, & Alrousan, R. Z. (2023). Improving cyclic response of heat-damaged non-ductile RC joints using CFRP hybrid systems. In Construction and Building Materials (Vol. 377, p. 131150). Elsevier BV. https://doi.org/10.1016/j.conbuildmat.2023.131150

12. Alhassan, M., **Alkhawaldeh, A.**, Betoush, N., Alkhawaldeh, M., Huseien, G. F., Amaireh, L., & Elrefae, A. (2023). Life Cycle Assessment of the Sustainability of Alkali-Activated Binders. In Biomimetics (Vol. 8, Issue 1, p. 58). MDPI AG. https://doi.org/10.3390/biomimetics8010058

13. **Alkhawaldeh, A. A.**, & Al-Rousan, R. Z. (2022). Upgrading cyclic response of heat-damaged RC beam-column joints using CFRP sheets. In Case Studies in Construction Materials (Vol. 17, p. e01699). Elsevier BV. https://doi.org/10.1016/j.cscm.2022.e01699

14. Al-Smadi, Y. M., Al-Huthaifi, N., & **Alkhawaldeh, A. A.** (2022). The effect of longitudinal hole shape and size on the flexural behavior of RC beams. In Results in Engineering (p. 100607). Elsevier BV. https://doi.org/10.1016/j.rineng.2022.100607

15. **Alkhawaldeh, A. A.**, Al-Huthaifi, N., & Obaidat, Y. T. (2022). Effectiveness of Externally Bonded and Near Surface–Mounted CFRP Reinforcement in Flexural Strengthening of RC Beams: Numerical Approach. In Practice Periodical on Structural Design and Construction, 27(2). American Society of Civil Engineers (ASCE). https://doi.org/10.1061/(asce)sc.1943-5576.0000687

16. Al-Huthaifi, N., **Alkhawaldeh, A. A.**, Obaidat, Y. T., & Alkhawaldeh, M. A. (2022). Flexural Strengthening of Reinforced Concrete Beams with Longitudinal Circular Hole Using Near-Surface Mounted CFRP Strips. In Practice Periodical on Structural Design and Construction, 27(2). American Society of Civil Engineers (ASCE). https://doi.org/10.1061/(asce)sc.1943-5576.0000660

17. Al-Rousan, R. Z., & **Alkhawaldeh, A.** (2021). Behavior of heated damaged reinforced concrete beam-column joints strengthened with FRP. Case Studies in Construction Materials, 15, e00584. https://doi.org/10.1016/j.cscm.2021.e00584

18. Al-Rousan, R. Z., & **Alkhawaldeh, A.** (2021). Numerical simulation of the influence of bond strength degradation on the behavior of reinforced concrete beam-column joints externally strengthened with FRP sheets. Case Studies in Construction Materials, 15, e00567. https://doi.org/10.1016/j.cscm.2021.e00567

19. **Alkhawaldeh, A.**, & Al-Rousan, R. (2021). Behavior of RC beams with different bond strength. Magazine of Civil Engineering. https://doi.org/10.34910/MCE.107.2

20. Al-Baijat, H., Alhawamdeh, M., & **Khawaldeh, A.** (2019). Studying the Flexural Behavior of Reinforced Concrete Beams under the Effect of High Temperature: A Finite Element Model. Advances in Science and Technology Research Journal, 13(2), 150–156. https://doi.org/10.12913/22998624/109055

➢ Published Book Chapter (Scopus indexed)

1. **Alkhawaldeh, A.**, Alhassan, M., Sawalha, A., Betoush, N., Amaireh, L., Abdalla, K., & Lagaros, N. (2025). Integration of 3D Printing and Machine Learning in Sustainable Construction: Feasibility and Challenges. In Lecture Notes in Civil Engineering (pp. 1–10). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-92029-5_1

2. Betoush, N., **Alkhawaldeh, A.**, Sawalha, A., Abu-Haifa, M., Yasin, M. F., Onaizi, A., Alhassan, M., & Elrefae, A. (2025). Synergistic Integration of 3D Printing and Machine Learning for Smart Structural Systems: Overview and Feasibility. In Lecture Notes in Civil Engineering (pp. 221–232). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-92754-6_21

3. **Alkhawaldeh, A.**, Betoush, N., Sawalha, A., Alhassan, M., & Abdalla, K. (2024). Life Cycle Assessment and Sustainability Characteristics of Built Environment Systems. In Lecture Notes in Civil Engineering (pp. 523–531). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-57800-7_48

4. **Alkhawaldeh, A.**, Betoush, N., Alkhawaldeh, M., Alhassan, M., & Amaireh, L. (2023). On-site Recycling of the Construction Demolition Wastes: Feasibility and Sustainability. In Studies in Big Data (pp. 10–17). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-42455-7_2

➢ Published Papers in the Conference Proceedings (Scopus indexed)

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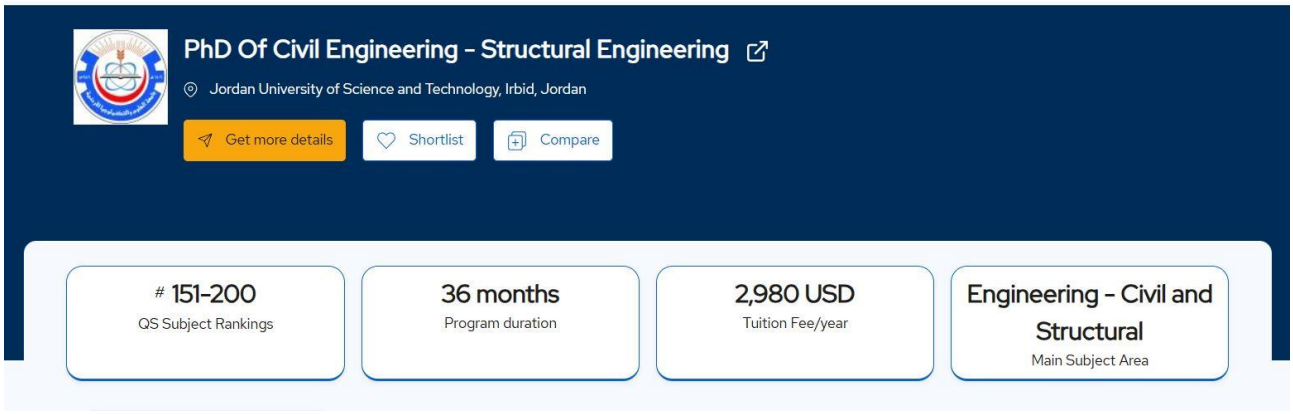
I hereby declare that the facts and information stated above are true, correct, and complete to the best of my belief and knowledge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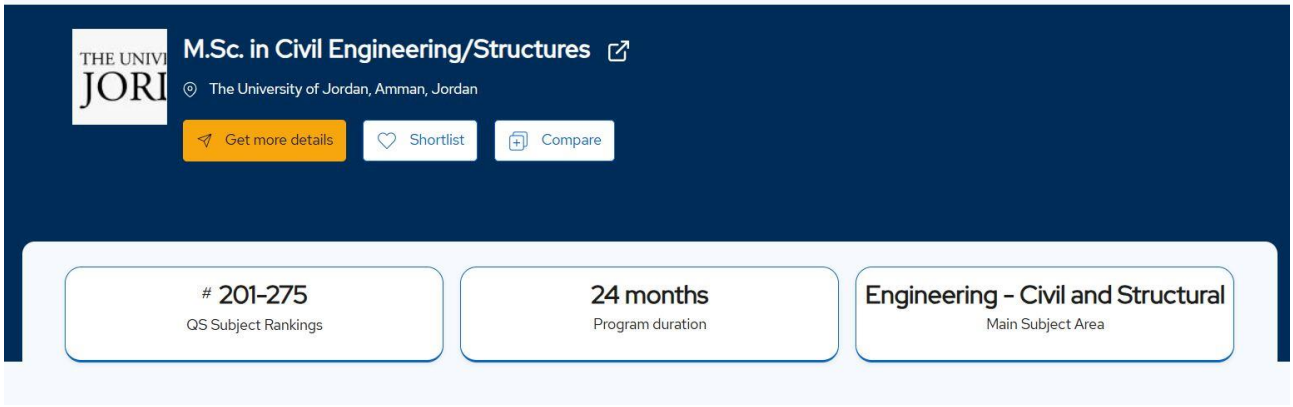
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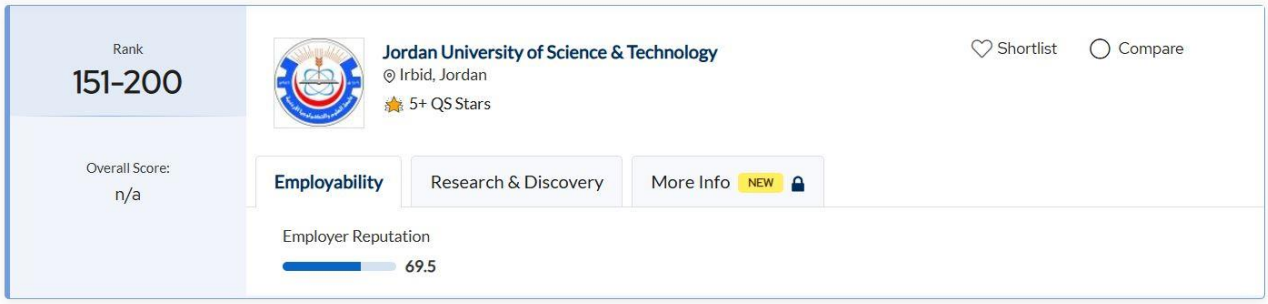
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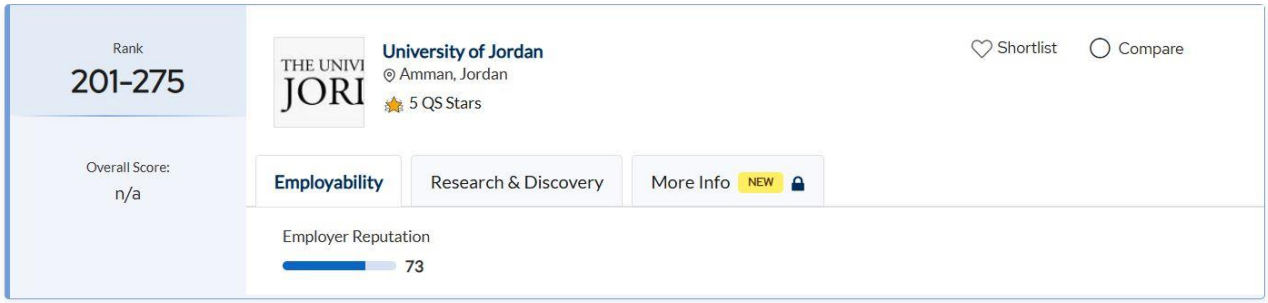
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