

د. عمرو ممدوح

أستاذ مساعد

Architecture and Interior Design.

كلية الهندسة والعمارة

جامعة نزوى، سلطنة عمان

هاتف: 25446200(968+)

محول: 557

البريد الإلكتروني: amr.mamdouh@unizwa.edu.om

موقع المكتب: 5C9.

يعمل في الجامعة: منذ 2026

الحالة الاجتماعية: Married.

Amr Mamdouh is an Assistant Professor of Digital Architecture at University of Nizwa (UoN), the Chief Architect & Founder of A.M. DESIGNS for interior design & decoration, a MENA Certified Professional Leader & Strategic Planning Manager, a Certified Soft Skills & Presentation Skills Trainer, and a Certified AI Trainer of Academic Staff on using AI in Education and Research. He received his Ph.D. degree in Architectural Engineering from Ain Shams University in 2022, with a research focus on ``Improving Architectural Students` Self-Learning and Continued-Education Skills``. He received his Master`s degree in Architectural Engineering from Mansoura University in 2016, with the thesis title of ``Towards Continued Education and Effective Development of Architecture Graduates' Professional Skills``. He received his Bachelor`s degree in Architectural Engineering from the same university in 2009 with a cumulative grade of very good and a graduation project grade of excellent. As an architect, he has designed, consulted, executed, and supervised multiple interior & exterior spaces, recreational resorts, public & private buildings, facades, and landscapes in Egypt, Sudan, KSA, the UAE, Kuwait, Iraq and Germany. In addition, he has trained hundreds of engineers, students, and project managers on the computer skills of AutoCAD & 3ds Max to effectively present both design & execution drawings and operate different projects' drawings/designs. Also, he has trained many Architects on the Architectural-related AI concepts and practical tools/applications. And he has trained many faculty members on the use of AI in education and academic research. Amr Mamdouh is an active researcher in the fields of education development, lifelong learning, employability skills, building technology, controlling environmental impacts, and sustainability applications. And he is a peer reviewer of submitted articles to some highly reputed scientific journals like: Engineering, Construction, and Architectural Management (Cite Score: 7.0) & Ain Shams Engineering Journal (Cite Score: 8.0). Also, he is an academic editor for Future Engineering Journal (FEJ).

المؤهلات الأكاديمية

PhD in Architectural Engineering، Ain Shams University، 2022، Improving Architectural Students` Self-Education & Continued-Education Skills

Master of Science in Architectural Engineering ، Mansoura University ، 2016، Towards continued education & effective professional development of architecture Graduates' skills

B. Sc. in Architectural Engineering ، Mansoura University ، 2009، Ministry of Renewable Energy Campus

أنشطة التدريس

Architectural Design II ....., It introduces students to the fundamentals of architectural design through the exploration of space, form, volume, scale, and three-dimensional composition. The course emphasizes creativity, conceptual thinking, and hand drawing as essential tools for developing and communicating architectural ideas. Students learn the architectural design process—from initial observation and conceptual sketches to spatial organization, form development, and final architectural expression—through the design of a small residential/villa project. Functional requirements, human scale, materials, structure, furniture, and indoor–outdoor relationships are integrated into the design process ....., 2026 - Present.

Digital Graphics II (SketchUp) ....., It explores various up to date computer applications & soft wares relevant to Architectural Design, Drawings and Presentations. Advanced study in computer-aided drafting (CAD) and other 3d and rendering software's, three-dimensional parametric solid modeling, Boolean operations, advanced lighting and scene layout for CAD rendered images, the study of descriptive geometry and lateral surface developments and creation of working drawing sets ....., 2026 - Present.

BUILDING INFORMATION MODELING (Revit) ....., Introduction to Building Information Modelling (BIM) software. Use of architectural specific (BIM) oriented software to execute the elements required in designing standard architectural buildings utilizing custom features to create walls, windows and specific design requirements for construction in residential / commercial and industrial architecture ....., 2026 - Present.

COMPUTER-BASED PROFESSIONAL APPLICATION (3ds-Max) ....., It explores various up to date computer applications relevant to interior design and architectural engineering. On completion of the course, the student will be able to present their design work, in 3D software, in a professional manner ....., 2026 - Present.

Graduation Project of Architectural Engineering and Interior Design ....., 2026 - Present.

الأنشطة البحثية

الاهتمامات البحثية ـ

Architectural Education

AI in Architecture

Employability Skills

Lifelong Learning

Building Technology

Sustainability

العرض في المؤتمرات ـ

A Novel Pedagogical Approach for Enhancing Skills of Architecture Students Using AI-Powered Software Tools، IACA-9: 9th International Architectural Conference of Assiut University: Planning and Design for Tomorrow، Hurghada, Egypt، 2025

Applying Students-Staff Contract as Teaching Methodology for Undergraduate Architectural Students، IACA-9: 9th International Architectural Conference of Assiut University: Planning and Design for Tomorrow، Hurghada, Egypt، Nov. 2025

المنشورات ـ

مقال:

1. 2026 ،Curriculum development for integration between industry and education This paper proposes an exploratory, stakeholder-informed framework for curriculum co-creation. It addresses the critical need to align higher education engineering programs with evolving industry demands in Egypt, with the goal of enhancing graduate employability and foster innovation. It builds upon the British Council-funded CRUISE project, which sought to co-create a 21st-century engineering curriculum. A qualitative methodology was employed, utilizing a Participatory Action Research (PAR) approach. Five consultative workshops were conducted with 48 stakeholders from academia, industry, and government. The study involved exploring existing university-industry collaborations and identifying enhancement opportunities through curriculum development. Our approach included analyzing current industry trends, examining existing engineering curricula, and pinpointing key skill gaps through expert collaborations and workshops. We propose a comprehensive framework centered on establishing a collaborative environment, notably through a Government-University-Industry (GUI) Nexus Centre. This framework emphasizes integrating industry-relevant content via advisory boards, internships, and updating courses. Effective implementation hinges on dedicated faculty training and the widespread adoption of experiential learning methods. This paper offers a preliminary multi-stakeholder framework tailored to the Egyptian context, providing a potential blueprint for educational institutions and policymakers to cultivate a dynamic, responsive curriculum. It uniquely bridges theoretical understanding with actionable strategies for bridging the skill gap. The findings are primarily derived from the CRUISE project's scope, focusing on engineering education within the participating Egyptian and UK .universities, thus limiting generalizability without further context-specific adaptation

2. 2025 .A Novel Pedagogical Approach for Enhancing Skills of Architecture Students Using AI-Powered Software Tools، One of architects' challenges is keeping pace with the rapid changes in AI technologies. This research addresses the need to integrate artificial intelligence (AI) into all stages of architectural education and practice. This study utilizes a mixed-methods approach, including an experimental online training workshop, capstone projects, and a post-workshop survey to assess participant learning and perceptions. The workshop provided hands-on training on over 40 AI applications relevant to various architectural disciplines. A comprehensive literature review was conducted, exploring current AI educational experiments worldwide and outlining AI concepts, and their benefits in architecture. Participants then completed individual capstone projects, demonstrating their acquired skills. Survey results revealed high levels of participant satisfaction with the workshop content and its relevance to professional practice. The study concludes by emphasizing the significant skills enhancement and adaptability in architectural practice due to AI integration; to ensure a dynamic and responsive enhancement of essential future-oriented employability skills. The findings offer insights for educators and curriculum developers to enhance teaching strategies and prepare students for the challenges in the architecture careers. The study introduces a novel pedagogical approach by integrating practical AI tools training into architectural design education, bridging technology and architecture. A limitation of this study is the relatively short duration of the workshop and the focus on a specific set of AI tools. Further research work will be conducted to assess long-term training effects on .both professional practice and curriculum development

3. 2025 Applying Students-Staff Contract as Teaching Methodology for Undergraduate Architectural Students, This study addresses the growing need to reform architectural-education methods in response to rapid technological advancements and evolving professional demands. This study investigates the integration of flipped-classrooms, students-staff contracts, and active learning strategies to enhance self-learning and employability-skills among architecture students. A mixed-methods pedagogical experiment was implemented across seven architectural courses in two universities, involving 138 students over five academic semesters. The study introduced a Students-Staff Contract model emphasizing student involvement in course design, topic selection, assessment planning, and classroom engagement. Flipped classrooms were central, with students presenting assigned topics followed by class discussions, quizzes, and instructor-led lectures. Surveys were distributed to assess student satisfaction and perceived effectiveness. Results revealed high student satisfaction with the collaborative teaching approach and increased engagement with course content. Participants reported improved self-learning, teamwork, critical thinking, and readiness for professional practice. High student intention to recommend the courses further underscored the success of the applied methods. This study presents a scalable educational model that merges flipped learning with participatory governance through Students-Staff Contracts. It fosters a learner-centered environment that develops essential 21st-century skills, offering valuable insights for curriculum designers and academic institutions aiming to modernize architectural education. The study's limitations include its context-specific implementation, relatively short evaluation period, and focus on a select group of architectural courses. Future research is required to assess the long-term impact of this model on student performance and professional development.

4. 2023 Intelligent System Application to Monitor the Smart City Building Lighting, A smart city incorporates infrastructure methods that are environmentally responsible, such as smart communications, smart grids, smart energy, and smart buildings. The city administration has prioritized the use of cutting-edge technology and informatics as the primary strategy for enhancing service quality, with energy resources taking precedence. To achieve optimal energy management in the multidimensional system of a city tribe, it is necessary not only to identify and study the vast majority of energy elements, but also to define their implicit interdependencies. This is because optimal energy management is required to reach this objective. The lighting index is an essential consideration when evaluating the comfort indicators. In order to realize the concept of a smart city, the primary objective of this research is to create a system for managing and monitoring the lighting index. It is possible to identify two distinct phases within the intelligent system. Once data collection concludes, the monitoring system will be activated. In the second step, the operation of the control system is analyzed and its effect on the performance of the numerical model is determined. This evaluation is based on the proposed methodology. The optimized results were deemed satisfactory because they maintained the brightness index value (79%) while consuming less energy. The intelligent implementation system generated satisfactory outcomes, which were observed 1.75 times on average.

5. 2022 Environmental and Moral Education for Effective Environmentalism: An Ideological and Philosophical Approach, This article offers a critical review of the research on moral and environmental education as a basis for building environmentalism. The review's objective is to present an ideological and philosophical theory and research on environmentalism through moral education. The bulk of this research involves empirical research that examines the correlation between moral education and environmentalism, ideologies produced by moral education, and philosophical arguments inherent in environmental education. A deductive argument is made following the review of the existing research on moral education to highlight the educational approaches that have been hailed as effective. Some of the environmental educational approaches identified as being effective include proactive environmental education, creating an environmentally conscious environment, and real-life environmental education simulations. The research also identifies moral education whose focus is the creation of a moral consciousness among learners as being critical for the development of environmental consciousness. Inculcation of religious education, creating a moral educational atmosphere, moral leadership, moral life

simulations, and use of Ubuntu and Ukamu theoretical frameworks will bolster building a moral consciousness among learners. The argument presented in this article is that despite the existence of some contrary research, moral education can act as a bolster to positive attitudes, .actions, and behaviors towards the environment

Analysis of the gap in architects' skills of lifelong learning، A challenge facing 2022 .6 architectural education is keeping pace with the rapid changes in professional practice worldwide. This research assesses the processes that enable practitioners to keep up with the changes in the labour market while ensuring their skills remain relevant. This research examines the architects` self-learning and continuing education skills through an online survey. A literature review was performed to construct this survey. We compared the results of 112 Egyptian architects with those of a University of Cincinnati visiting professor delegation in Egypt. Raising skills through lifelong learning can help in bridging the gap between Egyptian graduates` competencies and the continuous change in the labour market. In light of these challenges, there was a need to integrate teaching between academic and non-academic institutions as a long-term strategy. It was also found that short-term plans for reviewing teaching methods and adapting to .competency-based education are very important

Computational simulation using machine learning models in prediction of CO2 absorption 2022 .7 in environmental applications، We developed two distinct regression models based on machine learning approach for estimating CO2 loading in solvents in this study. The methods of Adaptive boosted support vector (SVR) machines and the Adaptive boosted Gaussian process (GPR) are the models employed in this study for approximating carbon dioxide loading in the solvent for the purpose of environmental applications. Indeed, the case study is molecular separation for capture of CO2 from a mixture using amino acid salt solutions and understanding the influence of variables on variation of gas solubility. The target output parameter in the computations is the CO2 solubility in liquid phase (alpha). The scores of the two models of boosted SVR and boosted GPR were 0.830 and 0.991, respectively, using the R2 criterion. Furthermore, the error rate with the MAPE standard is 2.21758E-01 and 1.06938E-01 for the two models, respectively. The boosted SVR and regression of the boosted GPR with the MAE criterion have error rates of 1.64937E-01 and 7.28501E-02, respectively, as the models` third efficiency metric. The used machine learning models indicated to be robust for simulation of CO2 absorption in liquid phase .for environmental applications and can be used to save time and costs of measurements

Manufacturing of Sustainable Untreated Coal Ash Masonry Units for Structural 2022 .8 Applications، Burnt clay bricks are one of the most important building units worldwide, are easy and cheap to make, and are readily available. However, the utilization of fertile clay in the production of burnt clay bricks is also one of the causes of environmental pollution because of the emission of greenhouse gases from industrial kilns during the large-scale burning process. Therefore, there is a need to develop a new class of building units (bricks) incorporating recycled industrial waste, leading toward sustainable construction by a reduction in the environmental overburden. This research aimed to explore the potential of untreated coal ash for the manufacturing of building units (coal ash unburnt bricks). Coal ash unburnt bricks were manufactured at an industrial brick plant by applying a pre-form pressure of 3 MPa and later curing them via water sprinkling in a control shed. Various proportions of coal ash (i.e., 30, 35, 40, 45, 50, and 55%) were employed to investigate the mechanical and durability-related properties of the resulting bricks, then they were compared with conventional burnt clay bricks. Compressive strength, flexural strength, an initial rate of water absorption, efflorescence, microstructural analysis via scanning electron microscopy, and cost analysis were conducted. The results of the compressive strength tests revealed that the compressive strength of coal ash unburnt brick decreased with an increase in the content of coal ash; however, up to a 45% proportion of coal ash, the minimum required compressive strength specified by ASTM C62 and local building codes was satisfied. Furthermore, bricks incorporating up to 45% of coal ash also satisfied the ASTM C62 requirements for water absorption. Coal ash unburnt bricks are lighter in weight owing to their porous developed microstructure. The cost analysis showed that the

utilization of untreated, locally available coal ash in brick production leads us on the path toward more economical and sustainable building units.

9. 2021 Assessing the currently-used methods for improving continued-education skills in the architectural engineering departments in Egypt، The present study is concerned with assessing the currently used methods for improving the skills of continued education in the architectural engineering departments as well as the architectural market in Egypt. The main hypothesis of this study is that: the concept of continued-education in architecture is absent in Egypt, the current mechanisms of supporting continued-education are neither active nor effective, and the architectural education is not enough alone to build a professional architectural character. Survey forms have been distributed for practitioners, and interviews have been conducted with stakeholders for the sake of assessing the role of the universities in Egypt in supporting the graduates' skills development. The study compared the collected data about these universities through three main points: continued-education, graduates' follow-up and environment & community services. At the end, this study suggests some mechanisms based on the data analysis of the collected information. These mechanisms will help improving the practice of architecture in Egypt. In addition, the study proposed some recommendations regarding practicing architecture in Egypt for architecture's practitioners, Egyptian Engineering Syndicate, and Egyptian executive entities such as ministry of higher education & prime minister office. These recommendations will be delivered as well as a copy of this research to all stakeholders in order to be taken into considerations.

الخبرة الإدارية

2026 – الآن: Executive Member of Internship Committee - College of Engineering and Architecture, University of Nizwa

2026 – الآن: Executive Member of Timetable Committee - College of Engineering and Architecture, University of Nizwa

2026 – الآن: Executive Member of Examination Committee - College of Engineering and Architecture, University of Nizwa

الأنشطة الاستشارية

Academic Reviewer ، Journal of Engineering, Construction and Architectural Management، Emerald Group Publishing Ltd.، 2022- Present.

Academic Reviewer ، Ain Shams Engineering Journal، ELSEVIER Publishing، 2021- Present.

Research Consultant ، The research project: Co-create Engineering Curriculum for the 21st Century، Funded by the British Council، 2021- 2023

Principal Academic Researcher، The research project: Grounded Ecological Transition for the Mediterranean، Funded by the European Commission (Erasmus+)، 2025- 2026

Vice Chief Editor، Future Engineering Journal (FEJ)، Arab Journals Platform and ELSEVIER، 2022-2025

Scientific Committee Member، The 9th International Architectural Conference of Assiut University (IACA-9), Planning and Design for Tomorrow: Challenges, Experiences and Solutions.، 2025

External Evaluator of Exit Exams for Interior Design Graduates، Princess Nourah University، KSA، 2023

External Juror for the Interior Architecture graduation project dissertations، the British University in Egypt (BUE) in partnership with the Manchester Metropolitan University، 2026

External Juror for the Architecture Graduation Projects، Faculty of Fine Arts, Alexandria University، 2026

العضوية في الهيئات المهنية

Egyptian Engineers Syndicate :الآن–2009

الجوائز والتقدير

Times Higher Education (THE) Awards Arab World 2025: MOST INNOVATIVE TEACHER OF THE YEAR

Amr Mamdouh was nominated for the Times Higher Education Awards Arab World - category of ``Most Innovative Teacher of the Year`` based on his innovative teaching strategies, and he was SUCCESSFULLY SHORTLISTED in the Top 8 Finalists for the prestigious award, out of +400 regional .submissions

المرجع: https://www.unizwa.edu.om/staff/cea/amr.mamdouh