

AMR HASSAN MOHAMED MOHAMMED MOUSA



Teaching Assistant – Mechanical Engineering Department



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SUMMARY

I am a results-oriented mechanical engineer with a Ph.D. and extensive experience in HVAC system design, hydraulic systems, and teaching. My work has led to significant energy savings and recognition from industry and academia. I excel at bridging theory and practice, combining strong academic foundations with real-world expertise. Proficient in key engineering software, I bring adaptability, problem-solving skills, and effective communication to every project. I am passionate about sustainable solutions and committed to exceeding expectations.

LANGUAGES

- ♦ Arabic: Native (C2)
- ♦ English: Excellent (C1)



PERSONAL INFO

- ♦ Nationality: Egyptian
- ♦ Date of Birth: August 1, 1991
- ♦ Marital Status: Married
- ♦ Military Status: Exempted

EDUCATION

Doctor of Philosophy (Ph.D.) | Thermal Behavior of Shell and Tube Heat Exchanger | 2022 - In Progress

- ♦ Benha University| E Egypt
- ♦ Title: Experimental investigation of using Swirl Vane in Shell and tube Heat exchanger
- ♦ GPA: 3.58.

Master of Science (M.Sc.) | Mechanical Engineering

- ♦ Cairo University| Cairo |Egypt |2015–2019
- ♦ Thesis Title: Transient Numerical Study the Shape of Flow Field and Flashback Through Swirl Burner With Premixing Tube for SYN GAS – Air Mixture
- ♦ Description: Conducted a comprehensive numerical study on flow field behavior and flashback in a swirl burner and focused on premixed SYN GAS – air mixture, analyzing transient behavior.
- ♦ GPA: 3.3.

Bachelor of Science (B.Sc.) | Mechanical Power Engineering

- ♦ Faculty of Engineering |Benha University |2008–2013
- ♦ Graduation with Honors: very good (B+), GPA 79.75%
- ♦ Graduation Project: Design HVAC System and Shop Drawing for a Mall in the Kingdom of Saudi Arabia
- ♦ Project Grade: excellent (A+), GPA 4.

WORK EXPERIENCE

HVAC System Design Lecturer (Part Time)

Engovation Company |Cairo| Egypt |2018 – Till Now

Key Responsibilities:

- ♦ Deliver lectures on HVAC system design and develop course content.
- ♦ Guide students through design projects and practical applications.
- ♦ Provide expert insights on energy-efficient HVAC solutions.
- ♦ Mentor students to enhance their understanding of HVAC principles.
- ♦ Facilitate industry connections for students' career development.

Key Achievements:

- ♦ Develop a curriculum that aligns with industry demands and trends.
- ♦ Earn consistently high student evaluations for teaching excellence.
- ♦ Guide students in real-world HVAC projects, enhancing practical skills.
- ♦ Establish a network of professionals to foster student internships.
- ♦ Lead workshops on sustainable HVAC design, contributing to industry knowledge.

WORK EXPERIENCE

Hydraulic Power Lecturer (Part Time) ICG Company| Cairo |Egypt| 2018 –2020

Key Responsibilities:

- ♦ Instruct students on hydraulic power systems and provide specialized training.
- ♦ Develop comprehensive course materials and deliver engaging lectures.
- ♦ Mentor students on capstone projects and practical applications.
- ♦ Share expertise on hydraulic components, control, and maintenance.
- ♦ Foster collaboration among students for project-based learning.

Key Achievements:

- ♦ Enhance student engagement through practical demonstrations and exercises.
- ♦ Guide students to excel in hydraulic power design competitions.
- ♦ Receive positive feedback for delivering complex concepts with clarity.
- ♦ Develop a hands-on lab for students to experiment with hydraulic systems.
- ♦ Lead a research project on innovative hydraulic power applications.

Teaching Assistant and Lab Instructor (Part Time) FUE University| Cairo |Egypt| 2017 –2021

Key Responsibilities:

- ♦ Support teaching activities and guide students in lab sessions.
- ♦ Assist students with assignments and projects, offering guidance.
- ♦ Collaborate with faculty to enhance lab exercises and materials.
- ♦ Create an engaging and effective learning environment.
- ♦ Maintain a balance between academic commitments and industry work.

Key Achievements:

- ♦ Earn praise for effectively guiding students in lab sessions.
- ♦ Contribute to an interactive and practical learning experience

Teaching Assistant and Supervisor MTI University | Faculty of Engineering | Egypt | Sept. 2015 - Present

Key Responsibilities:

- ♦ Supervised undergraduate student graduation projects at MTI University.
- ♦ Taught a diverse range of courses to undergraduate students, contributing to their academic development and skill enhancement. Courses include:
 1. Thermodynamics I
 2. Thermodynamics II
 3. Mechanics II
 4. Fluid mechanics
 5. Hydraulic machines
 6. Heat transfer
 7. Air conditioning and refrigeration
 8. Fluid power system
 9. Internal combustion engine
 10. Engineering drawing 1
 11. Engineering drawing 2
 12. Computer application (AutoCAD program)
 13. Stress Analysis
 14. Machine Element Design
 15. Machine Construction
- ♦ Conducted practical lab courses for undergraduate students, offering hands-on experience and enhancing their understanding of theoretical concepts. Lab experiments included:
 17. Refrigeration cycle with super heater Experiment.
 18. Refrigeration cycle with sub cooler Experiment.
 19. Refrigeration cycle with heat exchanger Experiment.
 20. Single Compressor multi expansion valve Experiment.
 21. Refrigeration cycle with multistage with multi and individual expansion valve Experiment.
 22. Central air conditioner model.
 23. Hele Shaw & Manometer Experiment.
 24. Center Of Pressure Experiment.
 25. Bernoulli's Experiment.
 26. Flow Measurement Experiment.

WORK EXPERIENCE

Assistant Teaching Assistant and Lab Instructor

MTI University| Cairo |Egypt| 2014 – Till Now

Key Responsibilities:

- ♦ Deliver lectures on mechanical engineering and supervise lab sessions.
- ♦ Develop course materials, revise curriculum, and mentor students.
- ♦ Lead a team of lab instructors, ensuring high-quality sessions.
- ♦ Collaborate with peers to enhance teaching methods and interdisciplinary learning.
- ♦ Establish industry partnerships for student internships.

Key Achievements:

- ♦ Design a project-based learning initiative, enhancing practical skills.
- ♦ Receive consistently high student evaluations for teaching excellence.
- ♦ Create and deliver workshops on career readiness and practical skills.
- ♦ Publish research on pedagogical innovation, contributing to education literature.
- ♦ Develop online resources to supplement course materials.

HVAC System Design Engineer

Focus Office| Cairo |Egypt| 2014 –2015 (Part Time)

Key Responsibilities:

- ♦ Design and optimize HVAC systems, considering energy efficiency.
- ♦ Collaborate with architects and clients to ensure system integration.
- ♦ Conduct heat load calculations and select appropriate equipment.
- ♦ Prepare technical documentation and oversee system installation.
- ♦ Ensure systems meet client requirements and industry standards.

Key Achievements:

- ♦ Develop HVAC solutions that significantly reduce operational costs.
- ♦ Design climate control systems for healthcare facilities, prioritizing patient comfort.
- ♦ Manage HVAC projects within tight schedules and budget constraints.

Teaching Assistant and Lab Instructor

New Damietta Higher Institute of Engineering and Technology | Damietta |Egypt| 2014–2014

Key Responsibilities:

- ♦ Support faculty in teaching and guide students in lab sessions.
- ♦ Assist students in comprehending complex concepts and provide feedback.
- ♦ Collaborate with colleagues to design lab experiments aligned with curriculum.
- ♦ Mentor students in projects, fostering a practical learning environment.
- ♦ Demonstrate teamwork and coordination within the teaching team.

Key Achievements:

- ♦ Enhance students' understanding through engaging lab sessions.
- ♦ Earn commendation from students for effective communication and teaching.
- ♦ Contribute to a successful inter-departmental workshop, promoting cross-disciplinary learning.
- ♦ Co-author research on innovative teaching methods, presented at a national conference.
- ♦ Facilitate development of online learning resources.

Senior HVAC System Design Engineer

Freelancer| Cairo |Egypt| 2015 –2018 (Part Time)

Key Responsibilities:

- ♦ Design and optimize HVAC systems, considering energy efficiency.
- ♦ Collaborate with architects and clients to ensure system integration.
- ♦ Conduct heat load calculations and select appropriate equipment.
- ♦ Prepare technical documentation and oversee system installation.
- ♦ Ensure systems meet client requirements and industry standards.

Key Achievements:

- ♦ Develop HVAC solutions that significantly reduce operational costs.
- ♦ Design climate control systems for healthcare facilities, prioritizing patient comfort. Manage HVAC projects within tight
- ♦ schedules and budget constraints.

Consultant Engineer (Pumping Systems Design) **Ministry of Agriculture| Cairo |Egypt | 2018 – 2022**

Key Responsibilities:

- Led design and implementation of pumping systems for a wetland project.
- Collaborate with experts to ensure environmentally sustainable solutions.
- Conduct feasibility studies and hydraulic calculations for optimized design.
- Provide strategic direction to project teams for successful integration.
- Oversee testing and commissioning to ensure system functionality.

Key Achievements:

- Design pumping systems critical to the wetland project's timely completion.
- Achieve a 20% energy consumption reduction through innovative design.
- Receive recognition from Ministry of Agriculture for project execution.
- Present project outcomes at a national water management conference.
- Publish a white paper on sustainable water management practices

Senior HVAC System Design Engineer **INFRA Egypt Office| Cairo |Egypt| 2023 –Present (Part Time)**

Projects:

- HVAC systems for CAPITAL HEIGHTS 1 (40–41).
- Ventilation systems for CAPITAL HEIGHTS 1 (40–41).
- HVAC systems for Triple Bay Marina Resort 3 Project in U.A.E .
- HVAC systems for CAPITAL HEIGHTS 2 (42–43).
- Ventilation systems for CAPITAL HEIGHTS 2 (42–43).
- HVAC systems for Water Treatment Station in El Madina El Monawara.
- Ventilation systems for Water Treatment Station in El Madina (KSA).

Key Responsibilities:

- Design and optimize HVAC systems, considering energy efficiency.
- Collaborate with architects and clients to ensure system integration.
- Conduct heat load calculations and select appropriate equipment.
- Prepare technical documentation and oversee system installation.
- Ensure systems meet client requirements and industry standards.

Key Achievements:

- Develop HVAC solutions that significantly reduce operational costs.
- Design climate control systems for healthcare facilities, prioritizing patient comfort. Manage HVAC projects within tight schedules and budget constraints.

WORK EXPERIENCE

Consultant Engineer (Hydraulic & Pneumatic Systems Design) **Engovation Company| Cairo | Egypt | 2018 –2020**

Key Responsibilities:

- Led interdisciplinary teams in designing complex hydraulic and pneumatic systems.
- Conducted system simulations, optimizing performance, efficiency, and reliability.
- Provided expert guidance on fluid dynamics, system control, and energy efficiency.
- Collaborated with clients to understand requirements and tailor solutions.
- Mentored junior engineers, fostering professional growth and knowledge sharing.

Key Achievements:

- Developed innovative hydraulic system design, increasing productivity by 15% for an industrial client.
- Received "Engineer of the Year" award for outstanding hydraulic system designs.
- Played a pivotal role in securing a major contract through a successful project bid.
- Led advanced hydraulic design training, enhancing team capabilities and skills.
- Published an article on sustainable hydraulic system design in a prestigious engineering magazine.

PRACTICAL TRAININGS

Focus's Office for HVAC System Design| 1year

- ♦ Description: Engaged in a comprehensive year-long training program at Focus's Office, focusing on HVAC system design. Acquired hands-on experience in designing heating, ventilation, and air conditioning systems for various types of buildings and structures.

Talkha Power Station|2012|6 Months

- ♦ Description: Underwent a 6-month training program at Talkha Power Station, gaining practical insights into power generation processes, operation, and maintenance of power plants. Acquired knowledge about the intricate systems and equipment used in power generation.

2Belayim Petroleum Company| August 2010|2 Months

- ♦ Description: Undertook a 2-month training program at Belayim Petroleum Company, focusing on various aspects of petroleum operations, including exploration, drilling, and production processes. Gained exposure to real-world applications in the petroleum industry.

Qarun Petroleum Company| July 2010 | 4 Months

- ♦ Description: Completed a 4-month training program at Qarun Petroleum Company, gaining practical experience in the field of oil and gas operations. Acquired insights into the upstream processes, reservoir management, and production techniques.

Arab Organization for Industrialization| July 2011| 4 Weeks

- ♦ Description: Participated in a 4-week training program at the Arab Organization for Industrialization, focusing on industrial processes and technologies. Acquired practical knowledge of manufacturing and production operations.

Training at Arab Contractors| August 2011

- ♦ Description: Engaged in a 4-week training program at Arab Contractors, gaining hands-on experience in various aspects of construction and engineering projects. Acquired practical skills related to construction techniques and project management.

Egypt Air| August 2009|4 Months

- ♦ Description: Completed a 4-month training program at Egypt Air, focusing on aviation operations and services. Acquired insights into the aviation industry, aircraft maintenance, and passenger services.

COURSES

TOEFL Review Course

- ♦ Duration: 14/10/2019 to 04/11/2019
- ♦ Description: Participated in a TOEFL review course to enhance English language proficiency, focusing on key areas such as reading, writing, speaking, and listening skills.

ANSYS FLUENT Program

- ♦ Cairo University|08/2015 – 09/2015
- ♦ Description: Successfully completed the ANSYS FLUENT program, gaining expertise in computational fluid dynamics (CFD) and fluid flow simulations using ANSYS software. Acquired skills in modeling, analyzing, and interpreting fluid dynamics phenomena.

Turbo Machinery Course

- ♦ EGYCET| Mansoura| Egypt|10/2013 – 12/2013
- ♦ Description: Attended an intensive Turbo Machinery course, gaining an in-depth understanding of the design, operation, and maintenance of various types of turbomachinery such as turbines and compressors. Acquired knowledge in thermodynamics and fluid mechanics related to these systems.

Central Air Conditioning Course

- ♦ Industrial Training Council|Egypt|09/2011 – 09/2011
- ♦ Description: Completed a comprehensive course in central air conditioning systems, covering principles of refrigeration, system components, load calculations, and design considerations. Developed practical skills in HVAC system installation and maintenance.

Welding Course

- ♦ Industrial Training Council| Egypt| 09/2011 – 09/2011
- ♦ Description: Participated in a hands-on welding course focusing on various welding techniques and processes. Gained proficiency in different welding methods and safety practices, preparing for practical applications in the manufacturing and construction industries.

AutoCAD Program

- ♦ JELECOM | Mansoura University| 08/2009 – 09/2009
- ♦ Description: Completed an AutoCAD program, acquiring essential skills in computer-aided design and drafting. Developed proficiency in creating accurate technical drawings and plans using AutoCAD software.

CERTIFICATES

Second Rank among B.Sc. Students

- ♦ Mechanical Engineering Dept| Benha University| Faculty of Engineering | Egypt | 2013



Ideal Student - Mechanical Engineering Dept.

- ♦ Mechanical Engineering Dept | Benha University | Faculty of Engineering | Egypt | 2012

PERSONAL SKILLS

- ♦ Communication Skills
- ♦ Teamwork and Collaboration
- ♦ Problem Solving
- ♦ Adaptability
- ♦ Time Management
- ♦ Leadership
- ♦ Creativity
- ♦ Critical Thinking
- ♦ Emotional Intelligence
- ♦ Conflict Resolution
- ♦ Stress Management
- ♦ Initiative

COMPUTER SKILLS

- ♦ Microsoft Office
- ♦ SolidWorks
- ♦ Pipe Flow Expert
- ♦ ANSYS Fluent
- ♦ AutoCAD
- ♦ Online Meeting Platforms (Zoom, Google Meet)
- ♦ Creating Teaching Videos
- ♦ HAP Program
- ♦ Automation Studio
- ♦ Festo Program