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Google Scholar: <https://scholar.google.com/citations?user=-6joZ2wAAAAJ&hl=ar>

1. EDUCATIONAL PREPARATION

- Ph.D., Civil Engineering, Zagazig Univ., Egypt (Jan. 2021)
Dissertation: Behaviour of Perforated Steel Elements Under the Effect of Blast Loads.
- Master of Science, Structural Engineering, Zagazig Univ., Egypt (December 2015)
Thesis: Behavior of Base Connections of Cold-formed Steel Portal Frames
- Bachelor of Science in Civil Engineering, Zagazig Univ., Egypt (July 2010)
Graduated excellent with Honor and was Top Student among 450 students.

2. PROFESSIONAL EXPERIENCE

- Assistant Professor, Department of Structural Engineering, Zagazig University, Egypt, (April 2021- present).
- Graduate Instructor/Research Assistant, Department of Structural Engineering, Zagazig University, Egypt, (February 2016 to April 2021).
- Graduate Research and Assistant Lecturer, Department of Structural Engineering, Zagazig University, Egypt, (August 2011-December 2015).
- Structural Engineer (Part Time) "Engineering Consultations Firm", Egypt, (2010-2013).

3. TEACHING

3.1 Summary of Teaching Experience

I have a combination of hard and soft skills in 33 age that be able to make planning lessons for various age groups and providing instruction in the classroom. Also, I can interact with principals and other administrators to ensure the mission of the university and having a positive educational impact on the students.

I started my teaching career in 2011, when, as a graduate TA and RA, I was involved in several undergraduate courses of the civil engineering curriculum at the Zagazig University (Egypt). During my Master and doctoral studies, at Zagazig University, I was charged with teaching a complete course dealing with the structural analysis, structural mechanics, steel structures design and steel bridges design. I continue to work on improving its delivery and student assessment tools and the online courses, so I can realize obviously the advantages and disadvantages of the online courses. Finally, I participated with the quality management unit as a coordinator for Teaching staff standard to apply the quality accreditation for Civil Engineering Programs at Zagazig University.

3.2 Courses

a) Taught at Civil engineering program- Zagazig University, Egypt

Course	Semester	Level
Steel Structures Design	Spring 02, 03, 04, 05, 06, 07, 08, 17,	Undergraduate
	18, 19, 20 , 21 and 2022	Undergraduate
Steel Bridges Design	Fall 03, 04, 05, 06, 07, 08, 09, 16,	
	17, 18, 19 ,20 and 2021	

b) Taught at Electrical engineering program - Zagazig University, Egypt

Course	Semester	Level
Structural Analysis	Fall 12, 13, 14, 15, 2016	Undergraduate
Structural Mechanics	Spring 12, 13, 14, 15, 2016	Undergraduate

c) Taught at Construction management program - Zagazig University, Egypt

Course	Credit Hrs.	Semester	Level
STE302: Design of Steel Structures 1	3.00	Fall 2021	Undergraduate
STE402: Design of Steel Structures 2	3.00	Fall 2021	Undergraduate

d) Taught at Civil engineering program - Zagazig University, Egypt

Course	Credit Hrs.	Semester	Level
STE610: Advanced steel structure 1	3.00	Fall 2022	Post graduate
STE711: Thin-walled structures	3.00	Spring 2023	Post graduate

e) Taught at Civil engineering program - Nahda University (NUB) , Egypt

Course	Credit Hrs.	Semester	Level
CDR214: Civil drawing	1.00	Summer 2022	Undergraduate
CVE113: Civil drawing	1.00	Summer 2022	Undergraduate
CDR214: Civil drawing	1.00	Fall 2022	Undergraduate
CVE113: Civil drawing	1.00	Fall 2022	Undergraduate
CDR214: Civil drawing	1.00	Spring 2023	Undergraduate
DST321: Design of Steel Structures (1)	3.00	Fall 2022	Undergraduate
DST421: Design of Steel Structures (2)	3.00	Fall 2022	Undergraduate
CVE322: Design of Steel Structures (1)	3.00	Fall 2022	Undergraduate
CVE312: Design of Steel Structures (2)	3.00	Fall 2022	Undergraduate
HRB516: Design of High-Rise Buildings	3.00	Fall 2022	Undergraduate
CVE272: Design of High-Rise Buildings	3.00	Fall 2022	Undergraduate
DBR515: Design of Bridges	3.00	Spring 2023	Undergraduate
DSR513: Structural Dynamics	3.00	Spring 2023	Undergraduate

CVE322: Design of Bridges	3.00	Spring 2023	Undergraduate
CVE176: Structural Dynamics and Seismic analysis	3.00	Spring 2023	Undergraduate
CVE317: Design of Steel Structures	3.00	Fall 2022	Undergraduate

3.3 Qualified to Teach

- Auto CAD (2D,3D drawing), TEKLA Structures, SAP2000, ETABS, SAFE, STAAD. Pro. CSI-Bridge, Autodesk Robot and ABAQUS, LS-dyna (Finite element software).
- Civil drawings
- Steel structures and bridges Design
- Structural Analysis
- Structural Mechanics
- Introduction to Structural Dynamics
- Explosion Effects and Structural Design for Blast
- Advanced Structural Steel Design
- Behavior of Reinforced Concrete Members
- Theory of Elastic Stability
- Materials and Measurements

4. RESEARCH

I was involved in research efforts in the area of structural applications and hazard mitigation for steel structures. I have an experience in preparing the experimental programs and modeling the different loads on the structural elements.

4.1 Research Interests

Non-linear behavior and modeling of steel and concrete elements, modeling of structures under blast loading, Experimental testing of different structural members under Static and dynamic behavior to increase the toughness of structural elements. Laced RC beams

4.2 Publications

- 1) Nawar, M., Elhosseiny, O. and **Arafa, I.** (2020). "Numerical Investigation on Effective Spans Ranges of Perforated Steel Beams." Structures 25, 398–410, doi.org/10.1016/j.istruc.2020.03.026
- 2) Nawar, M., Elhosseiny, O. and **Arafa, I.** (2021). "Numerical damage evaluation of perforated steel columns subjected to blast loading." Defence Technology Journal, [Doi.org/10.1016/j.dt.2021.03.019](https://doi.org/10.1016/j.dt.2021.03.019)
- 3) Mahmoud T. Nawar, **Ibrahim T. Arafa**, Osama M. Elhosseiny, Ayman El-Zohairy, (2021). "Full static resistance of castellated steel beams with hexagonal web openings for blast response predictions." Engineering Structures Journal, 245, <https://doi.org/10.1016/j.engstruct.2021.112844>.
- 4) Ayman El-Zohairy, Fahad Alsharari, Hani Salim, **Ibrahim T. Arafa**, and Mahmoud T. Nawar. (2022). "Monotonic Property of Steel-RC Composite Beams Strengthened with Externally Pre-stressed Tendons." Canadian Journal of Civil Engineering. <https://cdnsciencepub.com/doi/abs/10.1139/cjce-2021-0237>
- 5) Nawar, M., Elhosseiny, O. and **Arafa, I.** (2022). "Damage assessment of perforated steel *Ibrahim Talaat, Dr.*

beams subjected to blast loading." Structures Journal.

<https://doi.org/10.1016/j.istruc.2022.04.051>

- 6) M.M. Metwally and **I.T. Arafa** I.I. Ishac, M.K. Swailem. (2015)." Base Connections for Single Cold-Formed Steel Columns". Computational & Technology Resources, Paper 2.44 from CCP: 108, ISBN 978-1-905.
- 7) M.M. Metwally and **I.T. Arafa** I.I. Ishac, M.K. Swailem. (2015)." Structural Behaviour of Base Connections of Cold-Formed Steel Portal Frames". Computational & Technology Resources, Paper 2.45 from CCP: 108, ISBN 978-1-905.
- 8) Ayman El-Zohairy, Fahad Alsharari, Hani Salim, **Ibrahim T. Arafa**, and Mahmoud T. Nawar. (2022). "Monotonic Property of Steel-RC Composite Beams Strengthened with Externally Pre-stressed Tendons." Canadian Journal of Civil Engineering.
<https://cdnsiencepub.com/doi/abs/10.1139/cjce-2021-0237>
- 9) Nawar, M., Kaka, M., Elhosseiny, O. and **Arafa, I.** (2022). Effect of Supporting Base System on the Flexural Behavior and Toughness of the Lighting GFRP Poles. Sustainability, 2022, 14.19: 12614.
<https://www.mdpi.com/2071-1050/14/19/12614>
- 10) Nawar, M., Elhosseiny, O. and **Arafa, I.** (2022). "Damage assessment of perforated steel beams subjected to blast loading." Structures Journal.
<https://doi.org/10.1016/j.istruc.2022.04.051>
- 11) Allawi, A. A., Shubber, A. N., Al Gharawi, M., El-Zohairy, A., Ibrahim, T. H., Al-Ahmed, A. H. A., & **Arafa, I. T** (2022). Enhancement of RC T-beams toughness using laced stirrups reinforcement for blast response predictions. Structural Concrete.
<https://doi.org/10.1002/suco.202200894>
- 12) Nawar, M., Elhosseiny, O. and **Arafa, I.** (2021). "Numerical damage evaluation of perforated steel columns subjected to blast loading." Defence Technology Journal, [Doi.org/10.1016/j.dt.2021.03.019](https://doi.org/10.1016/j.dt.2021.03.019)

4.3 Editorship of Journals and Review of Manuscripts

- EIJEST Egyptian International Journal of Engineering Sciences and Technology
- Structures
- Journal of Building Engineering.
- Advances in Concrete Construction.

4.4 Supervisorship

1. Radwa Badr, M.S, "Behavior of Moment Connection of Different Cold-Formed Steel Sections". Zagazig University.
2. Mohammed Amer, M.S, "Behavior of Self Drill Cold-Formed Connections." Zagazig University.
3. Abanob Adel, M.S, "Assessment of the Behavior of steel bridge columns (Piers) under close range detonation." Zagazig University.
4. Mohammed Ahmed, M.S, "Behavior of composite castellated and cellular steel beams with ultra-high performance concrete." Zagazig University.
5. Gehad Abd EL- Azeem, M.S, "Structural Behaviour of Pre-stressed Steel Box Girder Bridges." Zagazig University.

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6. Fatma Mohamed Khaled, M.S, "Behavior of Composite Slabs with Engineered Cementitious Composite under Blast Loading." Zagazig University.
7. Raghda Ibrahim Abo-Elenin Halima, Phd, "Behavior of Cold-Formed Double Skin Columns filled with Engineered Cementitious Composites (ECC)." Zagazig University.
8. Islam Abdelfattah Mohamed salama, Phd, "Nonlinear Behavior of Steel-Concrete Composite Shear Walls." Zagazig University.

5. COMPUTATIONAL SKILLS

- Proficient in Finite Element Analysis: (**LS-DYNA and ABAQUS**) with focus on analysis of different structures subjected to blast loads.
- Very good with engineering programs, such as **AUTOCAD, TEKLA Structures, SAP2000, ETABS, SAFE, STAAD. Pro, Auto desk ROBOT and CSI-Bridge.**

6. ENGINEERING PRACTICE EXPERIENCE

- Part-time Structural Engineer at various consulting firms in Egypt. My design experience includes design of Concrete Buildings, Steel Structures and Bridges.
- Consultant of Reinforced Concrete and Steel Structures at Research and Consulting Center at Zagazig University (2021-Present)

- Supervising and design two educational building in Zagazig University.
 - Preparing reports for inspecting the construction status of existing buildings in order to restore and rehabilitate them.
- Supervising the Social housing at the city of May 15.

• HDEC ENGINEERING CONSUTANT (February 2016–present).

Job Title : Senior Structural Engineer.

Projects : Participate such In:

- Post tension slab (long slab span).
- Four hangers in KSA (Steel and Concrete Structures).
- Cairo Electricity control buildings (strengthening of Concrete Structures).
- Town houses villa (Concrete Structures).
- Observation control building in Borg alarab airport.
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• Bureau Egyptien du Conseils Techniques (April 2013–December 2016).

Job Title : Structural Designer and detailer and quality control Engineer.

Duties : Responsible for Design of R.C & Steel buildings).

Projects : Participate In many Projects Such as:

- Kahromica Pipe Rack (Steel Structure).
- HVDC Electricity Station (Steel and Concrete Structures).
- El-Nobaria Electricity Station (Steel and Concrete Structures).
- Schnider Electric Factory (Steel and Concrete Structures).
- Rehabilitation & Adaptation ,Algiers
- Refinery (Electrical Substations)
- Algeria ACI Code SARL ROWAD

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- Refinery (Electrical Substations)
- Algeria Euro code SARL ROWAD
- Rehabilitation & Adaptation ,Algiers
- Refinery (Electrical Substations)
- Algeria BAEL Code SARL ROWAD
- 110/13.8 KV AL-Tiyam Substation KSA ACI Code Alstom Grid

• **SAG is an engineering consulting office (December 2010 –october 2012).**

- Job Title : Senior Structural Design Engineer (Team Leader of Steel Department).
- Duties : Responsible for Steel Department & Performing structural analysis, design and preparing structural drawings of both reinforced concrete and steel structures.
- Projects : Participate In many Projects Such as:
 - Ghana Hospitals (Design of R.C & Steel buildings).
 - Al Watania Paddy Rice & Storage area in Pyramids West
 - Industries Project in 10 th of Ramadan (Steel).
 - Teba Gardens 6 October E.C.P DIAA CONSULT
 - Pyramids West Industries 10Ramadan E.C.P EL_YOSSRE
 - Nakheel City Res.Buildings New Cairo E.C.P VISION
 - Semon Hotel Luxor E.C.P DIAA CONSULT
 - New Hay El-Akkad Aswan E.C.P DIAA CONSULT
 - Hatchery Lab. Egypt E.C.P Al Watania Poultry
 - 500 Bed Military Hospital Ghana BS Code Euroget De-Invest
 - 60 Bed Regional Hospital Ghana BS Code Euroget De-Invest
 - 160 Bed Regional Hospital Ghana BS Code Euroget De-Invest
 - 250 Bed Regional Hospital Ghana BS Code Euroget De-Invest
 - Zahret El-Mamora Towers Alex. E.C.P DIAA CONSULT
 - Park view project Alex. E.C.P DIAA CONSULT
 - Eskan Project Port Said E.C.P DIAA CONSULT
 - Ras Sedr Resort South Sinai E.C.P VISION
 - Remas Commercial Mall New Cairo E.C.P VISION
 - Elmahmoudia Admin.BLD. Cairo E.C.P DIAA CONSULT.
 - Sama Aswan Aswan E.C.P DIAA CONSULT.

• **SMAC Engineering Consulting Office –Prof. Dr. Saeed Abd Allah (July 2010– December 2010).**

- Job Title : Civil Engineer.
- Duties : Responsible for Design and supervision of R.C & Steel buildings. Projects : Participate In many Projects Such as:
 - Group of Five-Foot Passes in El-Emarat (Steel Bridges).
 - Steel Shed for Mobil Station (Steel Structure).
 - Petroget Stores in Portsaid (Steel Structure Consisting of Frames).
 - House building at New Cairo - R.C. Buildings (12 floors).
 - Construction of Under Ground Multi Story Building (Under Ground RC Structure).
 - Preparing Al-Bank Al-Ahli Al-Misry at Al-Exandria "Moharm Bk Branch" - R.C. Buildings (1 floors).
 - Review Structural Drawings and Calculations for Al-Mogamaa Al-Ashrea
 - Several Types of R.C. Buildingand Factories.