

# Ali M. Youssef Ahmed El-Helaly

Teaching Assistant | Academic Researcher in Mathematics

Department of Mathematics, Faculty of Science, Sohag University, Sohag, Egypt

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## Professional Summary

Teaching Assistant and mathematics researcher with a strong foundation in analytical and applied mathematics, particularly special functions and fractional models. Active in peer-reviewed research and international academic events, with sustained undergraduate teaching experience across core mathematical subjects.

## Research Interests

Special functions; fractional calculus and fractional differential equations with applications; complex analysis; harmonic analysis with applications.

## Education

2020–2021 **M.Sc. in Mathematics**, Sohag University, Egypt.

Thesis: *Advanced Studies on some Higher Transcendental Functions with some Applications*.

Supervisors: Prof. Mahmoud A. Abul-Ez; Prof. Zenhom G. Kishka; Dr. Mohammed A. Seleem.

2018–2019 **Pre-Master of Science in Mathematics**, Sohag University, Egypt (Letter Grade: A<sup>+</sup>).

2012–2016 **B.Sc. in Science (Mathematics)**, Sohag University, Egypt (Excellent with Honors; Letter Grade: A<sup>+</sup>).

## Academic Appointments

Apr **Teaching Assistant**, Department of Mathematics, Faculty of Science, Sohag University, 2022–Present Sohag, Egypt.

Dec **Instructor**, Department of Mathematics, Faculty of Science, Sohag University, Sohag, 2016–Apr 2022 Egypt.

## Publications

1. Mahmoud Abul-Ez, Mohra Zayed, **Ali Youssef**, and M. De la Sen. *On conformable fractional Legendre polynomials and their convergence properties with applications*. **Alexandria Engineering Journal**, 59(6):5231–5245, 2020. doi: 10.1016/j.aej.2020.09.052.
2. Mahmoud Abul-Ez, Mohra Zayed, and **Ali Youssef**. *Further study on the conformable fractional Gauss hypergeometric function*. **AIMS Mathematics**, 6(9):10130–10163, 2021. doi: 10.3934/math.2021588.
3. Mahmoud Abul-Ez, Mohra Zayed, and **Ali Youssef**. *Further Developments of Bessel Functions via Conformable Calculus with Applications*. **Journal of Function Spaces**, 2021:Article ID 6069201, 17 pages, 2021. doi: 10.1155/2021/6069201.
4. **Ali Youssef**, Zenhom Kishka, and Mohammed Saleem. *A New Generalized Bessel Functions and Solutions of a New Class of Fractional Kinetic Equations*. Submitted for publication.

## Bibliometric Profile (Scopus)

Scopus ID	Documents	Citations	<i>h</i> -index
57219533618	4	21	3

## Teaching Experience (Undergraduate Courses)

Calculus I and II; Ordinary Differential Equations; Partial Differential Equations; Probability; Special Functions; Algebra; Linear Algebra; Complex Analysis; Real Analysis; Functional Analysis; Mathematical Methods.

## Research Projects

2020 Co-Researcher, Academy of Scientific Research and Technology (ASRT), Egypt, Science UP Grant No. 6479.

## Awards and Recognition

2019 Best Website Prize, Sohag University.

## Technical Skills

Programming Fortran (Intermediate).

Mathematical Software LaTeX, Maple, MATLAB, Mathematica, Python (Advanced).

General Tools Windows, Microsoft Office.

## Languages

Arabic Native proficiency

English IELTS: 6.0

English Duolingo: 105

## Selected Conferences and Academic Events

1. MathConnect 2024: International Conference of Mathematics and its Applications, KFUPM, December 2024.
2. 7th Scientific Conference (2nd International) for Young Researchers, Sohag University, March 2–3, 2022.
3. 1st International Alumni's Mathematics UET Conference, UET Lahore (Pakistan), February 26, 2022.
4. Expert lecture on "National Mathematics Day," Anand International College of Engineering, Jaipur, India (Online), December 22, 2021.
5. Online International Workshop on "Modern Mathematical Methods and High-Performance Computing in Science & Engineering," India, November 23–24, 2021.
6. International Symposium on Recent Advances in Fractional Calculus, P. D. Patel Institute of Applied Sciences, CHARUSAT, Changa, Gujarat, India (Online), September 30–October 1, 2021.
7. International Conference on Applied Mathematics in Engineering (ICAME), Balikesir, Turkey (Online), September 1–3, 2021.
8. Symposium on Special Functions, Orthogonal Polynomials and Their Applications, Suez University, Egypt, 2021.
9. First Online Conference on Modern Fractional Calculus and Its Applications, Alexandria University, Egypt, 2020.

## **Academic Service and Outreach**

During the COVID-19 period, I maintained continuous academic communication with students and created a YouTube educational channel to support remote learning.

## **References**

References available upon request.