

Nesma Khalil
Senior Lecturer of Mathematics

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Publications & Grants

Research Journals

Top 1% Q1 Journals:

- Deepa Shankar, Adresya Azhakath, **Nesma Khalil**, Sajeev J, Mahalakshmi T, Sheeba K, Data Mining for Cyber Biosecurity Risk Management – a comprehensive review, *Computers & Security* (2023), doi: <https://doi.org/10.1016/j.cose.2023.103627>
- Shankar, D.D., **Khalil, N.** & Azhakath, A.S. Moderate embed cross validated and feature reduced Steganalysis using principal component analysis in spatial and transform domain with Support Vector Machine and Support Vector Machine-Particle Swarm Optimization. *Multimed Tools Appl* (2022). <https://doi.org/10.1007/s11042-022-13638-w>
- Daniela Coelho, **Nesma Khalil** & Deepa D. Shankar (2022) Teachers' perceptions and 'invisible' uses of plurilingual pedagogy in UAE K-12 schools, *International Journal of Multilingualism*, DOI: 10.1080/14790718.2022.2099400
- Radakovic, N., Dan, X., & **Khalil, N.** (2020). Patterns in Poetry. *The Mathematics Teacher*, 113(10). doi:10.5951/mtlt.2020.0162

Books/ Book Chapters

- Radakovic, N., & **Khalil, N.** (2019). An Educator's Journey: A Case of a Gifted and Talented Immigrant Teacher. In *Identifying, Describing, and Developing Teachers Who Are Gifted and Talented* (pp. 134-144). IGI Global.) **Research Grants**

Grants:

- 2024-2025: Research, Innovation, and Impact Grant for “Steganalysis incorporating Machine Learning/Deep Learning techniques to unveil cyber bio threats”. Amount awarded: AED 25,000.
- 2020-2021: Research, Innovation, and Impact Grant for “Statistical Steganalysis in Cyber Security by incorporating Machine Learning Techniques”. Amount awarded: AED 20,000.
- 2021-2022: Research, Innovation, and Impact Grant for “Cyber Bio Security-Analysis of next generation Gene sequencing and classification of malicious Gene sequence”. Amount awarded: AED 50,000.

Professional Experience

Senior Lecturer of Mathematics

Khalifa University, UAE | Aug 2023 – Present

- Teach undergraduate mathematics courses (Calculus I, Calculus II, Linear Algebra) using structured and student-centered instructional approaches.
- Develop and revise course materials, assessments, and instructional resources to ensure clarity, alignment with learning outcomes, and accessibility for diverse learners.
- Provide academic support and guidance through office hours, advising, and targeted outreach to at-risk students to strengthen persistence and engagement.
- Coordinate mathematics courses and collaborate with faculty to ensure consistent implementation of syllabi, assessment practices, and academic standards.
- Integrate formative feedback mechanisms and pedagogical techniques to continuously enhance teaching effectiveness and student learning.
- Incorporate interdisciplinary examples and research-informed perspectives to highlight the relevance of mathematics across scientific and technological domains.
- Support departmental course file review and documentation to ensure alignment with academic operations and compliance standards.

- Serve on departmental and university committees contributing to outreach, student engagement, academic documentation, and program improvement.
- Lead initiatives that promote mathematics beyond the classroom, including seminar series and departmental outreach events that connect mathematics with emerging applications.
- Contribute to advising, recruitment, and orientation efforts through university open days and student support activities.
- Engage in research and scholarly collaboration related to interdisciplinary mathematical applications, including manuscript development and grant activity.
- Participate in faculty development initiatives and instructional innovation projects aimed at enhancing teaching practice and academic quality.

Senior Instructor of Mathematics

Abu Dhabi University, UAE | Aug 2018 – Aug 2023

- Taught undergraduate engineering mathematics including Calculus I–III, Differential Equations, and Linear Algebra.
- Coordinated curriculum review and ensured alignment with program objectives.
- Applied student feedback and evaluation data to support course and syllabus improvements.
- Implemented instructional strategies that enhanced engagement and reasoning skills.
- Integrated educational technology (smart boards, computers, graphing calculators).
- Coordinated EmSAT preparatory courses.
- Chaired the Professional Development and Success Committee; served on Quality Assurance and Student Retention committees.
- Organized Math Fest and contributed to Abu Dhabi University’s 9th National Math Contest.
- Developed “Math for Business” course covering mathematical applications in finance and business contexts.
- Designed and delivered workshops and webinars for faculty and students.

Math Lecturer & Curriculum developer

Blyth Academy, Canada | Sep 2013 – Jul 2018

- Taught university-preparation mathematics (Advanced Functions, Calculus & Vectors, Data Management).
- Applied PBL, IBL, play-based learning, and computer-based learning pedagogies.
- Addressed student math anxiety through holistic and student-centered approaches.
- Designed instructional materials and aligned assessment methods with curriculum standards.
- Developed enrichment programs for students require additional preparation.
- Reviewed and adapted curriculum materials for clarity, layout, and assessment alignment.
- Collaborated with faculty to support Ontario curriculum implementation and institutional goals.
- Participated in conferences, meetings, and professional development events.

Math Teacher & Math Department Coordinator

Abu Dhabi Ministry of Education, UAE | Sep 2003 – Jul 2013

- Delivered instruction using manipulatives and hands-on learning to bridge abstract concepts.
- Developed Individual Education Plans (IEPs) for students with special needs.
- Maintained effective student rapport and classroom environment.
- Coordinated the Trends in International Mathematics and Science Study (TIMSS) test.
- Organized extracurricular math programs and events.
- Delivered professional development on curriculum design and instructional strategies.
- Evaluated curriculum effectiveness and recommended improvements.
- Collaborated with stakeholders to support curriculum, assessment, and instructional technology.

Education & Fellowship

- Master of Curriculum Studies and Teacher Development, University of Toronto, Canada — 2016
- Bachelor of Mathematics, Birzeit University, Palestine — 2002
- Fellow (FHEA), UK Higher Education Professional Standards Framework — 2022