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Oman Mathematics Committee





جامعة السلطان قابوس
Sultan Qaboos University

Oman Mathematics Committee

The Status of Mathematics in the Sultanate of Oman

National Report Submitted to

The International Mathematics Union (IMU)

In Support of The Sultanate of Oman's Application for
IMU Membership Group Upgrade

Under the General Supervision of

H.H. Dr. Mona Bint Fahad Al Said
Assistant V.C. for International Cooperation,
Sultan Qaboos University

Prepared by the Oman Mathematics Committee

Dr. Magda Bint Talib Al Hinai
Chairperson

Dr. Fatma Bint Salim Al Kharousi
Member

Dr. Mohamed Bin Said Al Ghafri
Member

Dr. Moza Bint Said Al Balushi
Member

Dr. Qais Bin Hamdan Al Farie
Member

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Executive Summary

The Status of Mathematics in the Sultanate of Oman

In Support of the Sultanate of Oman's Application for IMU Membership Group Upgrade

Over the past decade, mathematics in the Sultanate of Oman has undergone a significant transformation. Once characterized by the gradual development of individual academic programs, it has evolved into a coordinated national ecosystem that integrates education, research, innovation, institutional collaboration, and international engagement. Today, mathematics is recognized not merely as an academic discipline, but as a strategic enabler of scientific advancement, technological innovation, artificial intelligence, data science, and evidence-informed decision-making, fully aligned with the aspirations of Oman Vision 2040.

This report presents the evidence supporting the Sultanate of Oman's application for a Membership Group Upgrade within the International Mathematical Union (IMU). It demonstrates that, since attaining Full Membership in 2018, Oman has moved beyond establishing a national mathematical community to consolidating a mature, diversified, and internationally connected mathematical ecosystem capable of making sustained contributions to the global mathematical community.

The progress achieved since the 2018 IMU Membership Report is both substantial and measurable. Between the two reporting periods, the number of academic staff involved in teaching mathematics expanded from 332 to 4,942, reflecting the widespread integration of mathematics across public and private higher education institutions. During the period 2020–2025, mathematicians in Oman produced 1,972 peer-reviewed publications, while the number of formally registered mathematics research groups increased from 19 to 58, demonstrating significant growth in research capacity, institutional collaboration, and scientific productivity.

These achievements represent more than quantitative growth. They reflect the emergence of a robust national research ecosystem, supported by universities, research groups, quality assurance systems, competitive funding mechanisms, and coordinated national leadership. As this ecosystem has matured, mathematics research in Oman has expanded in both breadth and scope, reflecting the discipline's increasingly interdisciplinary role and its growing contribution to addressing national priorities and societal challenges.

The report further demonstrates that mathematical capacity is now distributed across a diverse higher education landscape rather than concentrated within a single institution. Sultan Qaboos University continues to serve as the country's flagship research university, while the University of Technology and Applied Sciences and an expanding group of private universities have developed significant research capabilities of their own. Together, these institutions support an integrated national ecosystem characterized by active research groups, growing postgraduate education, expanding undergraduate research, and sustained scientific collaboration.

The comparison of research funding between the 2018 and 2026 reports should be interpreted within the context of differences in reporting periods and data collection methodologies. Rather than indicating a reduction in national investment, the evidence demonstrates a broader and more diversified funding landscape, with mathematics research now supported across multiple universities through a combination of institutional, national, and international funding schemes. This distributed funding model reflects the increasing institutional maturity and sustainability of mathematics research in Oman.

Oman's international engagement has expanded in parallel with its national development. Through the leadership of the Oman Mathematics Committee, the country has strengthened its participation in IMU activities, international conferences, collaborative research, scientific workshops, capacity-building initiatives, and regional and global partnerships. National programmes promoting mathematics education, outreach, research, and scientific exchange have further enhanced the visibility of the Omani mathematical community and strengthened its integration within the international mathematical landscape.

Collectively, the evidence presented throughout this report demonstrates that the Sultanate of Oman has achieved substantial institutional maturity, research capacity, academic breadth, and international engagement. The progress documented reflects not only sustained quantitative growth, but also the successful consolidation of a nationally coordinated mathematical ecosystem that is well positioned to contribute to the advancement of mathematical sciences regionally and internationally.

Accordingly, the Sultanate of Oman respectfully presents this report in support of its application to upgrade its membership status within the International Mathematical Union.

Preface

Mathematics has become an increasingly important national priority in the Sultanate of Oman, reflecting its recognized role in advancing scientific knowledge, technological innovation, and evidence-based decision-making. As a fundamental enabler of the knowledge-based economy envisioned in Oman Vision 2040, mathematics underpins national efforts to strengthen education, research, innovation, and human capital development.

Over the past two decades, Oman has adopted a comprehensive and coordinated approach to developing the mathematical sciences. National initiatives have strengthened mathematics education across school and higher education, expanded research capacity, encouraged interdisciplinary collaboration, and increased engagement with the international mathematical community. This sustained development has been supported by national educational policies, quality assurance frameworks, and growing investment in research and academic excellence.

Oman's integration into the global mathematical community has progressed steadily through its membership in the International Mathematical Union (IMU), beginning with Associate Membership in 2010 and advancing to Full Membership in 2018. Since then, the country's mathematical community has continued to expand its international engagement through collaborative research, scientific conferences, academic exchanges, and participation in global mathematical initiatives.

This report has been prepared in accordance with the IMU Guidelines for Membership Applications. It provides an overview of the current status of mathematics in the Sultanate of Oman, highlighting the national framework supporting mathematics education and research, the contributions of higher education institutions, and the continued development of a vibrant mathematical community. The report is submitted in support of the Sultanate of Oman's application to upgrade its Membership status within the International Mathematical Union.

Progress Since the 2018 IMU Group 1 Membership Report

One of the principal objectives of this report is to demonstrate the progress achieved by the Sultanate of Oman since attaining full membership in 2018. Beyond presenting the current status of mathematics in the country, the report documents the evolution of the national mathematical ecosystem through measurable indicators of academic capacity, research productivity, research infrastructure, and institutional support. This comparison provides evidence of the sustained development of mathematics in Oman and reflect the country's readiness for an upgrade in its IMU status.

The present report builds upon the *Report on the Status of Mathematics in Oman* submitted to the International Mathematical Union (IMU) in 2018 in support of Oman's successful application for Full Membership. Since then, the mathematics landscape in Oman has undergone significant development, reflecting sustained expansion in higher education, research capacity, and institutional engagement in the mathematical sciences. The comparison below highlights the progress achieved between the two reporting periods.

Table 1. Growth of Mathematics in Oman Since the 2018 IMU Report

Indicator	**2018 IMU Report (2010 –2018)**	**2026 IMU Report (2020–2025)**
Academic staff teaching mathematics	332	4,942
Peer-reviewed publications	568 (71 publications per year)	1,972 publications
Registered mathematics research groups	19	58
Research funding	OMR 600,000	OMR 282,000

The 2018 figure reflects research funding reported for the period 2010–2018, whereas the 2025 figure summarizes research funding for the period 2020–2025

Interpretation

The comparison demonstrates the substantial progress achieved by the mathematics community in Oman since the country's successful IMU Group I membership in 2018. The number of academic staff involved in teaching mathematics across higher education institutions has expanded significantly, reflecting the continued growth of the sector and the widespread integration of mathematics within university programmes and foundation studies. Research activity has also strengthened considerably, with the number of peer-reviewed publications increasing substantially and the number of registered mathematics research groups rising from 19 to 58, indicating a significant expansion of the national mathematics research infrastructure. Although the research funding figures correspond to different reporting periods and are therefore not directly comparable, both reports demonstrate sustained investment in mathematics research.

In addition, the Oman Mathematics Committee (OMC) receives an annual allocation of OMR 15,000 – 20,000 to support national mathematical activities, including conferences, workshops, outreach initiatives, and international engagement, further strengthening the national mathematical ecosystem.

Collectively, these indicators reflect the continued development of Oman's mathematics ecosystem, the strengthening of its research capacity, and its growing contribution to the international mathematical community, providing strong evidence of the country's readiness for IMU Group upgrade.

1. National Context for Mathematics in Oman

The Sultanate of Oman has increasingly recognized mathematics as a strategic discipline that underpins scientific advancement, technological innovation, and sustainable economic development. In recent years, national policies have placed growing emphasis on strengthening mathematics education, expanding research capacity, and fostering interdisciplinary applications that contribute to the country's transition toward a knowledge-based economy.

This national direction is closely aligned with the objectives of Oman Vision 2040, which identifies education, research, innovation, and digital transformation as key pillars of future development. Within this framework, mathematics is regarded not only as an academic discipline but also as an enabling science that supports engineering, artificial intelligence, data science, health sciences, economics, environmental sustainability, and emerging technologies.

Over the past two decades, mathematics in Oman has evolved through coordinated efforts across schools, higher education institutions, research organizations, and professional scientific bodies. Universities have strengthened mathematics curricula, expanded undergraduate and postgraduate programs, increased research productivity, and developed interdisciplinary collaborations addressing national priorities. At the same time, growing participation in regional and international scientific activities has enhanced the visibility of Omani mathematicians within the global research community.

Oman's engagement with the International Mathematical Union (IMU) has formed an important milestone in this development. The Sultanate became an Associate Member of the IMU in 2010 before attaining Full Membership in 2018, reflecting the steady growth of its mathematical community and its increasing contribution to international mathematical activities. Since then, Oman has continued to expand its participation through international conferences, collaborative research, educational initiatives, and scientific exchange.

Today, mathematics occupies a central position throughout the national education and research ecosystem. It serves as a foundation for school education, an essential component of higher education across all scientific and technical disciplines, and an increasingly active area of research contributing to national development priorities. This report presents the current status of mathematics in Oman by examining its role across education, research, institutional development, and international engagement.

2. Mathematics in School Education

Mathematics is a core component of school education in the Sultanate of Oman and is recognized as a fundamental discipline for developing logical reasoning, analytical thinking, quantitative literacy, and

problem-solving skills. It is taught throughout all stages of general education and provides the essential foundation for further study in science, engineering, technology, economics, and other mathematics-intensive disciplines in higher education.

The national mathematics curriculum has undergone continuous development to align with international educational standards and the evolving needs of society and the economy. Curriculum reforms have emphasized conceptual understanding, mathematical reasoning, problem solving, real-world applications, and the effective integration of digital technologies into teaching and learning. These developments aim to equip students with the knowledge and competencies required for higher education, lifelong learning, and participation in an increasingly knowledge-based economy.

Teacher preparation and continuous professional development constitute another key pillar of mathematics education in Oman. Mathematics teachers are prepared through specialized university programmes and supported by ongoing professional development initiatives that strengthen subject knowledge, pedagogical practice, curriculum implementation, assessment methods, and the integration of innovative teaching approaches. These efforts contribute to maintaining high standards of mathematics teaching across the national school system.

Improving student achievement in mathematics is a strategic priority under Oman Vision 2040. The Ministry of Education continuously monitors learning outcomes through national assessment mechanisms while actively participating in international comparative studies, most notably the Trends in International Mathematics and Science Study (TIMSS). Participation in these assessments provides internationally benchmarked evidence that supports curriculum enhancement, informs educational policy, strengthens teacher development programmes, and contributes to continuous improvement across the education system.

Beyond the formal curriculum, mathematics education is further enriched through programmes for gifted students, national mathematics competitions, problem-solving activities, and collaborative initiatives involving schools, universities, and professional organizations. These activities encourage mathematical creativity, develop advanced problem-solving abilities, and inspire students to pursue mathematics and related disciplines at the tertiary level.

Through these coordinated efforts, mathematics education in Oman provides students with a strong quantitative and analytical foundation while supporting the country's broader aspirations for scientific excellence, innovation, and sustainable development. It also establishes the educational pathway upon which mathematics teaching, research, and professional practice continue to develop within Oman's higher education system.

3. Mathematics in Higher Education

Mathematics occupies a central position within Oman's higher education system, serving both as an independent academic discipline and as a foundational component supporting a wide range of scientific, technological, and professional programmes. Across public universities and private higher education institutions, mathematics contributes to teaching, research, innovation, and workforce development, reflecting its strategic importance to national development and the objectives of Oman Vision 2040.

Mathematics education in Oman is delivered through two complementary academic pathways. The first comprises dedicated mathematics departments and mathematics education programs that offer undergraduate and postgraduate degrees while advancing research in pure mathematics, applied mathematics, and mathematics education. The second consists of mathematics courses delivered through foundation programs and service teaching, providing essential quantitative and analytical competencies for students enrolled in engineering, computing, information technology, business, economics, health sciences, education, and other academic disciplines.

The diversity of mathematics programmes reflects the varying missions of Oman's higher education institutions. Several universities offer comprehensive degree programmes extending from bachelor's to master's and doctoral levels, while others provide mathematics primarily through foundation studies or as supporting courses integrated within engineering, business, computing, and applied science curricula. Collectively, these complementary models ensure that mathematics supports both specialist education and the broader quantitative needs of higher education.

In recent years, mathematics has expanded beyond its traditional educational role to become an increasingly interdisciplinary field. Academic staff across Omani institutions contribute to research spanning pure mathematics, applied mathematics, statistics, artificial intelligence, data science, computational mathematics, optimization, mathematical modelling, engineering applications, sustainability, financial mathematics, biomedical sciences, and mathematics education. These activities have strengthened collaboration across disciplines and increased the contribution of mathematics to addressing national scientific and societal challenges.

Alongside teaching and research, higher education institutions actively support mathematical development through seminars, conferences, student competitions, outreach programs, mathematics clubs, and national and international research collaborations. Such activities enrich the academic environment, promote mathematical culture, and provide students and researchers with opportunities to engage with the wider scientific community.

The following sections present the institutional landscape of mathematics in Oman, beginning with an overview of the higher education sector before providing detailed profiles of individual public universities and private higher education institutions.

4. National Quality Assurance and Qualifications Framework

The quality of mathematics education in the Sultanate of Oman is supported by a comprehensive national framework that integrates institutional quality assurance with a unified qualifications system. Together, these mechanisms ensure that mathematics programs offered across higher education institutions are academically rigorous, nationally coherent, and aligned with international standards.

The Education Quality Assurance Authority (EQAA) serves as the national body responsible for assuring and enhancing the quality of education across the Sultanate. Through institutional accreditation, program accreditation, and periodic quality audits, the Authority evaluates higher education institutions against nationally approved standards covering governance, academic programmes, teaching and learning, research, student support, community engagement, and continuous quality improvement. These

processes encourage mathematics departments and programmes to maintain high academic standards while promoting innovation, accountability, and evidence based enhancement.

Complementing this quality assurance system, the Oman Qualifications Framework (OQF) provides the national reference framework for higher education qualifications. The framework defines qualification levels and specifies the expected learning outcomes, knowledge, skills, and competencies that students should achieve at each academic stage, from undergraduate to postgraduate education. By establishing nationally consistent qualification descriptors, the OQF promotes comparability across institutions while ensuring compatibility with internationally recognized qualifications frameworks.

Together, the EQAA and the OQF provide a coherent national structure that supports curriculum development, program design, student assessment, and academic quality across mathematics education. This integrated approach enables higher education institutions to align mathematics programmes with national development priorities while maintaining internationally benchmarked academic standards.

The implementation of these national quality mechanisms has contributed to the continuous improvement of mathematics education throughout the higher education sector. Universities and colleges have strengthened program design, enhanced learning outcomes, modernized teaching and assessment practices, and expanded opportunities for interdisciplinary learning and research. As a result, mathematics education in Oman continues to evolve within a nationally coordinated system that supports academic excellence, graduate employability, research capacity, and international recognition.

5. The Higher Education Landscape

Higher education in the Sultanate of Oman has undergone significant expansion over the past three decades, resulting in a diverse network of public universities and private higher education institutions that collectively contribute to national capacity building in education, research, innovation, and human capital development. Within this evolving landscape, mathematics has become an integral component of higher education, serving both as an independent academic discipline and as a foundational science supporting a broad range of academic and professional programs.

Mathematics is delivered through dedicated mathematics departments, mathematics education programmes, colleges of science and engineering, and foundation studies centers. In addition to specialist degree programmes, mathematics provides essential service courses for students enrolled in engineering, information technology, business, economics, health sciences, education, environmental sciences, and other quantitative disciplines. This complementary structure enables mathematics to support both specialist mathematical education and the wider quantitative needs of higher education.

The higher education sector demonstrates considerable diversity in the organization of mathematics. Some institutions offer comprehensive undergraduate and postgraduate programmes in mathematics and mathematics education, while others provide mathematics primarily through foundation programmes or as a supporting discipline embedded within engineering, business, computing, and applied science curricula. Together, these complementary models contribute to a coherent national mathematical ecosystem that serves the educational, scientific, and socioeconomic needs of the country.

Research in mathematics has similarly expanded across the higher education sector, encompassing both fundamental and interdisciplinary fields. Academic staff contribute to research in pure mathematics, applied mathematics, statistics, mathematical modelling, optimization, numerical analysis, differential equations, computational mathematics, artificial intelligence, data science, financial mathematics, engineering applications, biomedical modelling, sustainability, and mathematics education. These activities are supported through research groups, competitive research funding, postgraduate supervision, scientific conferences, seminars, and national and international collaborations.

Collectively, Oman's higher education institutions have established a broad academic and research base that continues to strengthen the country's mathematical capacity. The diversity of institutional missions, together with sustained investment in teaching, research, and international collaboration, has created an increasingly mature mathematical community that contributes to education, scientific advancement, innovation, and national development.

The following sections present detailed profiles of public universities and private higher education institutions. Each institutional profile follows a common reporting framework covering mathematics education, academic staffing, research profile, research productivity, research funding, postgraduate education, and academic activities. This standardized approach provides a comprehensive overview of the status of mathematics across higher education in the Sultanate of Oman while facilitating meaningful comparison between institutions.

5.1 Public Universities

The public university sector forms a foundation of mathematics education and research in the Sultanate of Oman. As the country's publicly funded higher education institutions, Sultan Qaboos University and the University of Technology and Applied Sciences play a leading role in advancing mathematical sciences through teaching, research, postgraduate education, innovation, and community engagement.

Together, these universities offer the broadest range of mathematics programs in the country, supported by highly qualified academic staff, active research groups, competitive research funding, postgraduate supervision, and strong national and international collaborations. Their contributions extend beyond mathematics as a discipline, providing essential quantitative education across engineering, science, technology, business, health sciences, and education.
The following profiles present the mathematics landscape within each public university using a common reporting framework, highlighting institutional strengths and facilitating comparison across universities.

5.1.1 Report on Mathematics at Sultan Qaboos University (SQU)

5.1.1.1 Introduction

Founded in 1986, Sultan Qaboos University (SQU) is Oman's flagship national university and the country's highest-ranked higher education institution. As the nation's leading comprehensive university, SQU plays a central role in advancing the objectives of Oman Vision 2040 through excellence in education, research, innovation, and human capital development.

Mathematics occupies a strategic position within the university's academic ecosystem and contributes to teaching, research, and innovation across several colleges. Mathematics is delivered through three complementary academic streams:

- The Department of Mathematics in the College of Science, offering undergraduate and postgraduate programs while leading research in pure and applied mathematics. Mathematics service courses offered to students across engineering, economics, computing, and other scientific disciplines.
- The College of Preparatory Studies (CPS), which delivers mathematics within the Foundation Program and prepares students for university-level study across all disciplines.
- The Curriculum and Instruction Department in the College of Education, where Mathematics Education and STEM Education prepare future mathematics teachers and contribute to educational research.

Together, these components create a comprehensive mathematical ecosystem that supports education, research, teacher preparation, interdisciplinary collaboration, and national capacity building.

5.1.1.2 Mathematics Education at SQU

Mathematics at SQU extends well beyond the Foundation Program and constitutes an integral part of undergraduate and postgraduate education.

The College of Preparatory Studies administers the Foundation Program, where mathematics is one of its core components. The curriculum develops students' quantitative reasoning, problem-solving abilities, and mathematical communication skills before they are enrolled their academic programs. The CPS mathematics team consists of 19 academic staff members, including three Ph. D. holders, and supports student learning through three complementary initiatives:

- Real life problem integration throughout mathematics courses.
- Mathematics Club activities that promote enrichment beyond the classroom.
- A Tutorial Centre, providing academic support for students requiring additional assistance.

Following the Foundation Program, mathematics continues through undergraduate service courses delivered to multiple colleges, particularly Science, Engineering, Economics and Political Science, and Agriculture and Marine Science.

The Department of Mathematics offers complete academic pathways leading to the Bachelor of Science, Master of Science, and Doctor of Philosophy degrees in Mathematics.

In addition, the Curriculum and Instruction Department prepares future mathematics teachers through its specialization in Mathematics Education, contributing directly to the national school education system.

Together, these components establish mathematics as both a disciplinary field and an enabling science that supports education across the university.

5.1.1.3 Academic Staff Profile

Mathematics education at SQU is supported by highly qualified academic staff distributed across its major mathematics units.

- The Department of Mathematics is one of the university's largest academic departments, comprising more than 40 faculty members (full/parttime) actively engaged in teaching, research, and postgraduate supervision.
- The College Preparatory Studies employs 19 mathematics academics, including three PhD holders, who deliver the Foundation Program to newly admitted students.
- The Mathematics Education specialization within the Curriculum and Instruction Department contributes additional expertise in mathematics education, curriculum development, and STEM education has 5 academic members

Collectively, these academic units provide the expertise necessary to support undergraduate teaching, postgraduate education, curriculum development, educational innovation, and internationally recognized research.

5.1.1.4 Research Profile

Mathematics at Sultan Qaboos University has developed into one of the country's strongest research environments, combining fundamental mathematical research with interdisciplinary applications.

5.1.1.4.1 Research Areas

Research activities encompass a broad spectrum of mathematical sciences whether pure or applied mathematics, including:

- Numerical Analysis
- Scientific Computing
- Fractional Differential Equations
- Mathematical Biology
- Fluid Dynamics
- Mathematical Modelling
- Optimization
- Algebra and Geometry
- Graph Theory
- Combinatorics
- Interdisciplinary Mathematical Applications
- And more.

In parallel, the Curriculum and Instruction Department conducts research in:

- Mathematics Education
- STEAM Education

This diversity reflects the university's commitment to advancing both mathematical theory and its applications in science, engineering, education, and society.

5.1.1.4.2 Research Groups

There are five active research groups within the college of mathematics and the college of education:

- Fractional Differential Equations: Theory, Modelling and Computation
- Nanofluid Flow Modelling
- Scientific Computing
- Mathematical Biology
- Innovation and Excellence in STEAM Education

5.1.1.5 Research Productivity

Research productivity remained consistently strong throughout the reporting period. Between 2021 and 2025, the Department of Mathematics produced 217 peer-reviewed journal publications, while the Mathematics Education specialization in the Curriculum and Instruction Department contributed an additional 244 publications.

Collectively, mathematics-related academic units at SQU produced 461 peer-reviewed publications during the reporting period. These publications span theoretical mathematics, applied mathematics, computational sciences, mathematics education, and STEM education, demonstrating the breadth of mathematical research conducted across the university.

5.1.1.6 Research Funding and External Collaboration

Research funding has grown steadily throughout the reporting period. Between 2021 and 2025, the Department of Mathematics secured 13 active research projects with a total value exceeding OMR 67,000, reflecting sustained institutional investment and enhancing research competitiveness.

Funding was obtained through:

- Internal Research Grants
- Collaborative Research Grants

The Department also expanded its international visibility through scientific conferences and collaborative research activities. Major international events included:

- International Conference on Recent Trends in Mathematics (ICM-SQU 2024)
- International Conference on Numerical Analysis and Optimization (NAO)

Since its launch in 2008, the triennial NAO Conference has grown into one of the Middle East's leading mathematics conferences, bringing together researchers from universities and research institutions worldwide, fostering scientific collaboration, and supporting postgraduate mobility.

5.1.1.7 Postgraduate Education and Student Research

The Department of Mathematics at Sultan Qaboos University graduated 38 master's students and 30 doctoral students in various fields of mathematics. Research topics in applied mathematics covered several fields for example; mathematical modelling, scientific computing, fluid mechanics, fractional differential equations, mathematical biology and numerical analysis. Besides Several fields in pure mathematics are covered in research conducted at SQU, of which we list; Algebra, Geometry, Graph Theory and Combinatorics. The department also supervised 109 undergraduate final-year projects between 2021 and 2025, demonstrating a strong culture of undergraduate research.

Beyond formal research supervision, the department organized 64 research seminars and the Mathematics Student Group conducted 39 academic and outreach activities, including Oman Mathematics Day celebrations, the Descartes Forum, Hypatia gatherings, and school outreach initiatives.

Meanwhile, during the period 2020–2025, the Department of Curriculum and Instruction at the College of Education, Sultan Qaboos University, graduated approximately 20 master's students and 8 doctoral students specializing in Mathematics Curriculum and Instruction.

5.1.1.8 Conclusion

Sultan Qaboos University hosts the most comprehensive mathematics ecosystem in the Sultanate of Oman, integrating undergraduate and postgraduate education, teacher preparation, foundation studies, research, and community engagement.

Across its academic units, mathematics supports students from their entry into university through doctoral education while contributing to interdisciplinary research in science, engineering, education, and technology.

During the reporting period, mathematics-related academic units produced 461 peer-reviewed publications, maintained four active research groups, supervised postgraduate and undergraduate research, secured competitive research funding, and organized internationally recognized scientific conferences.

These achievements demonstrate the university's leadership in advancing mathematical sciences in Oman and its growing contribution to regional and international mathematics through research excellence, innovation, and capacity building.

5.1.2 Report on Mathematics Across the University of Technology and Applied Sciences (UTAS)

5.1.2.1 Introduction

The University of Technology and Applied Sciences (UTAS) is the largest public higher education institution in the Sultanate of Oman. Established in 2020 through Royal Decree No. 76/2020, UTAS unified the former Colleges of Technology, Colleges of Applied Sciences, and Rustaq College of

Education into a single national university. This strategic transformation aligned higher education with the objectives of Oman Vision 2040 by strengthening educational quality, enhancing institutional efficiency, and supporting the country's transition towards a knowledge-based economy.

Today, UTAS operates across eleven campuses located in Muscat, Salalah, Suhar, Nizwa, Ibra, Shinas, Ibri, Sur, Rustaq, Al-Musannah, and Musandam. With more than 45,000 students and over 4,000 academic and administrative staff, it is the largest and most geographically distributed higher education institution in Oman.

Within this national framework, mathematics occupies a central position in the university's academic structure. Mathematics is delivered through three complementary academic streams:

- **Departments of Supportive Requirements**, responsible for disciplinary teaching, curriculum development, and research activities.
- **Mathematics within the General Foundation Program (GFP)**, which provides essential quantitative and analytical skills for students entering engineering, information technology, business, applied sciences, and other disciplines.
- **Mathematics in the College of Education,** Bachelor of Education in Mathematics.

Together, these three streams create a comprehensive mathematical ecosystem that supports student success, interdisciplinary education, and the development of research capacity across the university.

5.1.2.2 Mathematics Education at UTAS

Mathematics at UTAS extends well beyond the Foundation Program and forms an integral component of undergraduate education across multiple colleges.

Within the General Foundation Program (GFP), mathematics is one of the four core components alongside English, Computing, and General Study Skills. The mathematics curriculum equips students with fundamental competencies in algebra, functions, trigonometry, introductory statistics, and quantitative reasoning, preparing them for successful progression into their academic specializations.

Following completion of the GFP, mathematics continues through a sequence of credit-bearing courses embedded within diploma, advanced diploma, and bachelor's degree programmes. These include:

- Mathematics for Computing
- Discrete Structures
- Calculus I
- Calculus II
- Engineering Mathematics
- Probability and Statistics
- Mathematics for Machine Learning

These courses provide students with increasingly advanced analytical, computational, and modelling skills required in engineering, computing, business, and applied sciences.

In addition to service teaching, UTAS offers a Bachelor of Education in Mathematics through the College of Education. The program combines advanced mathematical knowledge with educational theory and teaching practice, preparing graduates to become qualified mathematics teachers for Omani schools.

Consequently, mathematics at UTAS represents a layered educational pathway beginning with foundational mathematical literacy, progressing through discipline-specific mathematical applications, and culminating in specialized teacher preparation. This integrated structure reflects the university's commitment to developing graduates equipped with the quantitative competencies required by Oman Vision 2040.

5.1.2.3 UTAS Academic Staff Profile

The mathematics community across UTAS consists of academic staff serving both the Departments of Supportive Requirements and the General Foundation Program.

Across all campuses, the Mathematics Departments comprise 98 PhD holders and 41 Master's degree holders, while the Foundation Program includes 14 PhD holders and 27 Master's degree holders.

This strong academic base provides the expertise required to support undergraduate teaching, curriculum development, educational innovation, and research across the university's multiple campuses.

5.1.2.4 Research Profile at UTAS

Although mathematics plays a significant teaching role across UTAS, the Mathematics Departments have simultaneously developed a vibrant and steadily growing research culture.

5.1.2.4.1 Research Areas

Research activities encompass both classical mathematical disciplines (Pure Mathematics

Applied Mathematics) and emerging interdisciplinary fields. Major areas of research include:

- Computational Mathematics
- Mathematical Modelling
- Fluid Dynamics
- Biomathematics
- Differential Geometry
- Algebra
- Ordinary, Partial and Fractional Differential Equations
- Graph Theory and Discrete Mathematics
- Statistics and Data Science

- Artificial Intelligence
- Machine Learning
- Big Data Analytics
- Scientific Computing
- Reliability and Queuing Theory
- Computational Mechanics
- Biomedical Modelling
- Nonlinear Dynamics and Pattern Formation
- Renewable Energy and Sustainability
- Materials Science and Optical Materials
- Mathematics Educational Technology
- Digital Learning Systems
- Astrophysical Modelling

The diversity of these research themes demonstrates the evolution of mathematics at UTAS from a supporting discipline into a multidisciplinary research platform addressing scientific, technological, educational, and societal challenges.

5.1.2.4.2 Research Groups

To support collaborative research, UTAS has established 20 formally registered research groups distributed across several campuses.

These groups cover a wide spectrum of specializations, including:

- Computational Mathematics
- Pure Mathematics
- Applied Mathematics
- Statistics
- Mathematical Modelling
- Computational Intelligence
- Data Science
- Quantum Mathematics
- Artificial Intelligence
- Computer Vision

- Educational Technology
- Computational Astrophysics
- Mathematics Operator Theory
- Advanced Materials and Sustainable Technologies

The establishment of these research groups reflects a strategic emphasis on interdisciplinary collaboration, research networking, and the development of specialized expertise across the university.

5.1.2.5 Research Productivity

Since the establishment of UTAS in 2020, the Departments of Supportive Requirements have demonstrated impressive research productivity.

Collectively, academic staff have produced:

- 985 peer-reviewed journal publications
- 1 scholarly book
- 1 published patent application
- 1 granted patent

Considering the relatively recent establishment of the university, these outputs demonstrate a rapidly developing research culture and strong engagement with both national and international research communities. The publications span a broad spectrum of mathematical sciences and interdisciplinary applications, reflecting the expanding impact of UTAS mathematics researchers.

5.1.2.6 Research Funding and External Collaboration

The Departments of Supportive Requirements have successfully secured research funding from a diverse portfolio of national and international agencies, highlighting both the quality and competitiveness of their research.

Funding bodies include:

- The Research Council (TRC)
- Ministry of Higher Education, Research and Innovation (MoHERI)
- Internal Research Fund
- Princess Nourah bint Abdulrahman University (Saudi Arabia)
- Collaborative Research Scheme under TEQIP-III through AICTE (India)
- University of Exeter (United Kingdom)
- Institute of Space Technology (Pakistan)
- Centre for Women in Mathematics, International Mathematical Union (CWM - IMU)

The funded research covers a wide range of mathematical and interdisciplinary themes, including applied mathematics, differential equations, mathematical modelling, artificial intelligence, data science, graph theory, computational mechanics, biomedical modelling, educational technology, renewable energy, materials science, and astrophysical modelling.

To date, the Mathematics Departments have secured approximately OMR 151,000 (~392,000 US $) in research funding. The funded projects extend from 2020 through December 2027, demonstrating sustained research activity and long-term external engagement.

The diversity of funding sources illustrates the increasing international visibility of UTAS mathematics researchers and their growing success in establishing collaborative research partnerships.

5.1.2.7 Student Research and Future Opportunities

Currently, undergraduate mathematics programmes at UTAS do not include final-year research projects, and postgraduate programmes (M.Sc. and Ph.D.) in mathematics have not yet been established. Nevertheless, the Rustaq branch completed 7 mathematics final-year projects during the period 2020–2025, demonstrating an emerging research culture at the undergraduate level. In addition, the university has already developed many of the essential components required to support future research-based education. These include:

- a highly qualified academic workforce;
- nineteen active research groups;
- an outstanding publication record;
- successful national and international collaborations; and
- sustained external research funding.

These achievements provide a strong platform for the future introduction of undergraduate research projects, postgraduate degrees, and expanded research supervision, further strengthening the university's contribution to mathematical sciences and national capacity building.

5.1.2.8 Conclusion

Within only a few years of its establishment, UTAS has developed one of the largest and most diverse mathematics communities in Oman. Mathematics plays a dual role within the university: as a foundational discipline supporting thousands of students through the General Foundation Program and program-specific mathematics courses, and as an active research discipline with growing national and international recognition.

Supported by a highly qualified academic community, the Department of Supportive Requirements have established 20 research groups, produced 985 peer-reviewed publications, authored one scholarly book, generated one published patent and one granted patent, and secured more than OMR 150,000 (~392,000 US $) in competitive research funding from a broad range of national and international funding agencies.

The breadth of research; from pure mathematics and applied mathematics to artificial intelligence, computational modelling, educational technology, sustainability, and data science, demonstrates the increasingly interdisciplinary role of mathematics in addressing contemporary scientific and societal challenges.

Although undergraduate research projects and postgraduate mathematics programmes have not yet been introduced, the existing academic and research achievements indicate that UTAS possesses the institutional capacity to expand these activities in the future. Continued investment in research, graduate education, and international collaboration will further enhance the university's contribution to mathematical sciences, innovation, and the strategic objectives of Oman Vision 2040.

5.2 Private Universities

Private higher education institutions constitute an important component of Oman's higher education system and make a substantial contribution to mathematics education across the country. Collectively, the sector comprises twenty-six universities and colleges that differ in size, mission, and academic specialization, yet together broaden access to mathematics education and strengthen the national mathematical community.

While the scale of mathematics activities varies among institutions, mathematics is delivered through dedicated departments, mathematics education programmes, foundation studies, or service courses that support engineering, computing, business, health sciences, education, and other quantitative disciplines. Several institutions have also established active research programmes supported by qualified academic staff, research groups, competitive funding, postgraduate supervision, and international collaboration.

The institutional profiles that follow present the mathematics activities of each private university and college using the same reporting framework adopted throughout this report. This standardized approach facilitates comparison across institutions while highlighting their individual contributions to mathematics education, research, postgraduate studies, scientific activities, and community engagement.

5.2.1 Report on Mathematics at A'Sharqiyah University

5.2.1.1 Introduction

A'Sharqiyah University, established in 2009, is one of the Sultanate of Oman's private higher education institutions, offering undergraduate and postgraduate programs across a range of disciplines. Mathematics has a broad presence within the university through the Center for Language and Foundation Studies (CLFS), the Department of Education, and the College of Applied and Health Sciences. Together, these academic units support foundation education, mathematics teacher preparation, and applied mathematical sciences, contributing to the university's mission of developing graduates with strong analytical, quantitative, and research capabilities.

5.2.1.2 Mathematics at A'Sharqiyah University

Mathematics at A'Sharqiyah University extends beyond the Foundation Program and forms an integral component of undergraduate and postgraduate education. The Center for Language and Foundation Studies prepares students for university study by strengthening their mathematical foundations, while

the Department of Education offers Bachelor of Education in Mathematics and Master of Education in Curriculum and Teaching Methods of Mathematics, contributing to the preparation of qualified mathematics teachers. The College of Applied and Health Sciences further supports mathematics through teaching and research in applied mathematics and interdisciplinary scientific applications.

5.2.1.3 Academic Staff Profile

The mathematics community at A'Sharqiyah University comprises academic staff serving the Foundation Program, the Department of Education, and the College of Applied and Health Sciences. Across these academic units, mathematics is supported by 12 PhD qualified academics and 13 Master's degree holders, providing a strong foundation for undergraduate and postgraduate teaching, curriculum development, educational innovation, and scientific research.

5.2.1.4 Research Profile

The university has established an active research culture spanning both mathematics education and applied mathematical sciences.

Research activities encompass mathematical modelling, applied mathematics, numerical optimization, image encryption and restoration, neural networks, robotic motion control, thermal fluid discharge, air pollution, wastewater treatment, groundwater pollution, water quality, civil engineering, and biological mathematical modelling. In mathematics education, research focuses on curriculum and teaching methods, contributing to the continuous development of mathematics teaching and learning.

To support collaborative research, the university has established several research groups and research initiatives, including the Mathematics Research Group, the Applied Mathematics Research Group, and research teams working in mathematical modelling, thermal fluid dynamics, environmental modelling, optimization, and mathematics education.

5.2.1.5 Research Productivity

Since 2020, mathematics-related academic staff have produced 177 peer reviewed journal publications, reflecting sustained scholarly productivity across mathematics, mathematics education, and interdisciplinary scientific research.

This strong publication record demonstrates the university's commitment to advancing both theoretical and applied mathematics while supporting educational innovation and multidisciplinary collaboration.

5.2.1.6 Research Funding and External Collaboration

The university has secured competitive research funding through the Ministry of Higher Education, Research and Innovation and the Internal Research Grant (IRG) program.

Funded projects have supported research in biological mathematical modelling, groundwater contamination modelling, and environmental modelling of desalination and power plant effluents. During the reporting period, the reported mathematics related research funding totaled OMR 24,300, demonstrating the university's growing research capacity and its commitment to addressing national scientific and environmental priorities through mathematical research.

5.2.1.7 Student Research and Future Opportunities

The university actively promotes both undergraduate and postgraduate research. Undergraduate students have undertaken mathematics related final year projects within the Department of Education and the College of Applied and Health Sciences, while the Department of Education has also supervised three Master's theses in mathematics education.

These activities reflect the university's commitment to research-based learning and the preparation of future mathematics educators and applied mathematics graduates.

5.2.1.8 Conclusion

Mathematics at A'Sharqiyah University represents a comprehensive academic and research ecosystem that integrates foundation education, mathematics teacher preparation, and applied mathematical sciences. Through the Center for Language and Foundation Studies, the Department of Education, and the College of Applied and Health Sciences, the university supports undergraduate and postgraduate education while fostering interdisciplinary research and innovation.

Supported by 12 PhD qualified academics and 13 Master's degree holders, the university has established a strong research profile, producing 177 peer reviewed journal publications since 2020 and securing OMR 24,300 in competitive research funding. The breadth of research, from mathematics education and mathematical modelling to environmental sciences, optimization, artificial intelligence, and engineering applications, demonstrates the university's growing contribution to mathematical sciences and its alignment with the objectives of Oman Vision 2040.

5.2.2 Report on Mathematics at Dhofar University

5.2.2.1 Introduction

Dhofar University, established in 2004, is one of the Sultanate of Oman's private higher education institutions, offering undergraduate and postgraduate programs across a range of disciplines. Mathematics is delivered through the Department of Mathematics and Sciences, where it supports both mathematics education and the quantitative requirements of other academic programs.

The department contributes to developing students' analytical thinking, quantitative reasoning, and problem-solving skills while supporting scientific research and interdisciplinary collaboration. Through its teaching and research activities, mathematics contributes to the university's mission of preparing graduates equipped to support national development and the objectives of Oman Vision 2040.

5.2.2.2 Mathematics Education at Dhofar University

Mathematics at Dhofar University extends beyond service teaching and forms an integral component of undergraduate education. The Department of Mathematics and Sciences offers mathematics courses for students enrolled in mathematics and science programs while also providing mathematical support for other disciplines requiring quantitative competencies.

The curriculum emphasizes mathematical reasoning, computational skills, and scientific problem-solving, enabling students to develop the analytical capabilities required for further study and

professional practice. Through this integrated approach, mathematics contributes to strengthening scientific literacy and interdisciplinary education across the university.

5.2.2.3 Academic Staff Profile

The Department of Mathematics and Sciences comprises six PhD qualified academic staff members. No Master's degree holders were reported during the data collection period.

This fully doctoral-qualified academic team provides the expertise required to support undergraduate teaching, curriculum development, student supervision, and research activities within the department.

5.2.2.4 Research Profile

The Department of Mathematics and Sciences has developed an active research culture that combines mathematical sciences with interdisciplinary scientific research.

Research activities span mathematics, physics, and chemistry, reflecting the department's multidisciplinary character and its contribution to addressing scientific challenges through quantitative methods.

To support collaborative research, the department has established the Statistical and Data Analysis Research Group, which provides a platform for research in statistics, data analysis, and quantitative methodologies while encouraging interdisciplinary collaboration across scientific disciplines.

5.2.2.5 Research Productivity

The department has maintained consistent scholarly productivity throughout the reporting period. Since 2020, academic staff have published approximately 20 peer reviewed journal papers annually, demonstrating sustained research activity and continuous engagement with the international scientific community.

This publication record reflects the department's commitment to advancing research in mathematics and related scientific disciplines while strengthening its research profile.

5.2.2.6 Research Funding and External Collaboration

The department has secured continuous research support from Dhofar University (DU) and the Ministry of Higher Education, Research and Innovation (MoHERI).

Since 2020, research projects have received approximately OMR 2,000 annually, with projects typically extending over one year. The funded research has supported interdisciplinary work in mathematics, physics, and chemistry, demonstrating the department's continued engagement with nationally supported research activities and its commitment to interdisciplinary scientific collaboration.

5.2.2.7 Student Research and Future Opportunities

The department actively promotes undergraduate research through final year projects. Between 2020 and 2025, students completed a total of 21 undergraduate final year projects, demonstrating sustained engagement with research-based learning and providing students with opportunities to apply mathematical knowledge to practical and scientific problems.

The department does not currently offer postgraduate programs in mathematics, and consequently no Master's or PhD research students were reported during the reporting period.

Nevertheless, the department's fully doctoral qualified academic staff, consistent publication record, active research group, and continuing research funding provide a strong foundation for expanding undergraduate research and supporting the future development of postgraduate mathematics programs.

5.2.2.8 Conclusion

Mathematics at Dhofar University plays an important role in supporting undergraduate education and interdisciplinary scientific research through the Department of Mathematics and Sciences. Supported by a fully doctoral-qualified academic team, the department has established a consistent record of scholarly productivity, publishing approximately 20 peer reviewed papers annually, while maintaining an active research culture through the Statistical and Data Analysis Research Group.

The department has also secured continuous research funding from Dhofar University and MoHERI and has actively engaged undergraduate students through 21 final-year projects completed during the reporting period. Although postgraduate mathematics programs have not yet been established, the department possesses the academic expertise, research capacity, and institutional foundation necessary to further strengthen its contribution to mathematical sciences, interdisciplinary research, and the objectives of Oman Vision 2040.

5.2.3 Report on Mathematics at the National University of Science and Technology (NU)

5.2.3.1 Introduction

The National University of Science and Technology (NU), one of the Sultanate of Oman's leading private universities, plays an important role in supporting national development through education, research, and innovation. Within this framework, the Department of Applied Mathematics and Science, housed in the College of Engineering, serves as the university's principal academic unit for mathematics, providing teaching, research, and interdisciplinary collaboration across engineering and applied sciences.

Mathematics at NU extends beyond classroom instruction to support industrial problem solving, scientific research, and national development priorities. The department combines fundamental mathematical sciences with applications in engineering, energy, public health, water resources, and sustainability, thereby contributing to the objectives of Oman Vision 2040.

5.2.3.2 Mathematics Education at NU

The Department of Applied Mathematics and Science delivers mathematics courses that support engineering education while fostering analytical thinking, quantitative reasoning, and mathematical modelling.

Although the department does not currently offer standalone undergraduate or postgraduate degrees in mathematics, it provides the mathematical foundation required for engineering disciplines and promotes the application of mathematical methods to real-world industrial and scientific challenges.

Through its teaching and research activities, the department contributes to the preparation of graduates equipped with the analytical and computational skills required in modern engineering practice.

5.2.3.3 Academic Staff Profile

The Department of Applied Mathematics and Science comprises nine academic staff members engaged in both teaching and research.

The department includes:

- 7 PhD qualified academics
- 2 Master's degree holders

Collectively, the faculty have produced more than 170 indexed publications, reflecting an active research culture distributed across the department. Five faculty members have each published more than ten research papers during the last five years, demonstrating sustained research productivity across a substantial proportion of the academic staff.

5.2.3.4. Research Profile

The Department has established a strong research identity centered on applied mathematics and mathematical modelling, with particular emphasis on addressing engineering, industrial, and public health challenges relevant to Oman.

5.2.3.5 Research Areas

Research activities encompass a diverse range of mathematical disciplines, including:

- System Reliability, Availability and Maintainability (RAM)
- Numerical Analysis
- Geometric Function Theory
- Dynamical Systems
- Fractional Differential Equations

These research areas support applications in industrial systems, renewable energy, desalination, epidemiology, ecological modelling, and engineering analysis, illustrating the department's commitment to interdisciplinary research with national impact.

5.2.3.6 Research Productivity

The department has developed a steadily growing research profile.

Current indicators include:

- More than 170 indexed publications
- More than 100 journal and conference papers
- Five faculty members with more than ten publications during the last five years

- Highest individual publication record exceeding 69 indexed papers

Recent publications have appeared in internationally recognized journals covering applied mathematics, fractional calculus, epidemiological modelling, reliability engineering, and geometric function theory.

Research has addressed topics including infectious disease transmission, industrial reliability, power systems, desalination technologies, fractional differential equations, optimization, and advanced mathematical analysis.

5.2.3.7 Research Funding and External Collaboration

The Department has established a competitive research funding portfolio supported by both national and international agencies.

Between 2013 and 2026, the department secured approximately OMR 135,700 in research funding through a combination of bilateral international projects, national competitive grants, and institutional funding schemes.

Major funding sources include:

- The Research Council (TRC), Oman
- Sultan Qaboos University–United Arab Emirates University Bilateral Research Program
- Competitive Faculty Research Grants (CFRG)
- College Research Fund
- Internal Research Grants
- Internal Collaborative Research Grants

Funded projects have addressed strategic national priorities, including:

- Epidemic transmission modelling
- Fractional differential equations
- Power system reliability
- Gas lift system optimization
- Mixed hyperbolic equations
- Industrial reliability analysis

The department's Reliability Research Group has additionally completed several industry-oriented projects involving desalination plants, renewable energy systems, power infrastructure, and industrial process optimization.

5.2.3.8 Postgraduate Research

Although the department does not currently offer a dedicated postgraduate degree in mathematics, it has successfully supervised doctoral research in applied mathematics.

To date, the department has supervised four completed PhD theses, all focusing on stochastic reliability models and industrial systems analysis.

These doctoral studies demonstrate the department's capacity to support advanced research in applied mathematics while contributing to national expertise in engineering reliability, infrastructure resilience, and industrial optimization.

5.2.3.9 Foundation Program

The Foundation Program plays an important role in supporting the university's mathematics ecosystem by equipping students with the quantitative reasoning and analytical skills required for successful progression into undergraduate studies. Mathematics is delivered through the Foundation Mathematics and Information Technology Unit, which comprises one PhD-qualified academic and two Master's degree holders. Since 2020, the unit has produced two peer-reviewed journal publications and secured a National University Research Grant (NURG) valued at OMR 1,975 for a project in mathematics pedagogy (2023–2025). Although the Foundation Program does not include undergraduate final-year projects, its academic staff have contributed to postgraduate research through the supervision of two PhD and one Master's research projects. These achievements demonstrate the unit's contribution to mathematics education, pedagogical research, and the overall academic and research capacity of the National University of Science and Technology.

5.2.3.10 Conclusion

The Department of Applied Mathematics and Science at the National University of Science and Technology has established a distinctive research profile centered on applied mathematics and quantitative modelling. Through its integration of teaching, interdisciplinary research, and industrial collaboration, the department contributes directly to engineering education and to national priorities in energy, water resources, public health, and infrastructure.

Supported by a highly qualified academic team, the department has produced more than 170 indexed publications, secured approximately OMR 137,675 in competitive research funding, and developed active collaborations with national industries and international partners. Its research spans reliability engineering, fractional calculus, numerical analysis, epidemiological modelling, and geometric function theory, demonstrating both scientific depth and practical relevance.

The department's sustained publication record, successful research funding, and doctoral supervision reflect a growing research capacity and position it as an important contributor to mathematical sciences and interdisciplinary innovation in Oman. Continued investment in postgraduate education, external collaboration, and applied mathematical research will further strengthen its contribution to Oman Vision 2040 and the advancement of mathematical sciences nationally and internationally.

5.2.4 Report on Mathematics at Sohar University

5.2.4.1 Introduction

Sohar University, established in 2001, is one of the Sultanate of Oman's leading private higher education institutions, offering undergraduate and postgraduate programs across a broad range of

disciplines. Mathematics plays a significant role within the university's academic structure through the Mathematics Education Department, while additional mathematics instruction is provided through the Foundation Program.

The department combines mathematics, mathematics education, and interdisciplinary research, contributing to undergraduate and postgraduate education, scientific research, and teacher preparation. Through its academic and research activities, the department supports the development of quantitative reasoning, educational innovation, and research capacity in alignment with the objectives of Oman Vision 2040.

5.2.4.2 Mathematics Education at Sohar University

Mathematics at Sohar University extends beyond the Foundation Program and forms an integral component of undergraduate and postgraduate education.

The Mathematics Education Department prepares future mathematics teachers while providing mathematics courses that strengthen analytical thinking, quantitative reasoning, and problem-solving skills. The Foundation Program further supports students by equipping them with the mathematical competencies required for successful progression into their undergraduate studies.

Together, these two academic streams create an integrated mathematics environment that supports both disciplinary education and teacher preparation.

5.2.4.3 Academic Staff Profile

The mathematics community at Sohar University consists of academic staff serving both the Mathematics Education Department and the Foundation Program.

The Mathematics Education Department comprises 27 PhD qualified academic staff, while the Foundation Program includes one PhD qualified academic and five Master's degree holders.

This highly qualified academic workforce provides the expertise required to support undergraduate and postgraduate teaching, curriculum development, research supervision, educational innovation, and interdisciplinary research.

5.2.4.4 Research Profile

The Mathematics Education Department has established a vibrant research culture spanning both theoretical mathematics and mathematics education.

Research activities encompass mathematical modelling, algebra and number theory, computational nanofluid mechanics, analytical and applied mathematics, quantum information, artificial intelligence in mathematics education, culturally responsive mathematics teaching, finite element analysis, heat transfer, engineering applications, and mathematics teacher education.

To support collaborative research, the department has established several active research groups and research initiatives, including:

- Mathematical and Statistical Modelling

- Algebra and Number Theory
- Computational Nanofluid Mechanics
- Analytical and Applied Mathematics (Quantum Information)
- Convective Heat Transfer in Hybrid Nanofluids
- Comparative Stress Analysis and Parametric Optimization using Finite Element Analysis
- Web-Based Project Learning in Mathematics Teacher Education
- Artificial Intelligence Applications in Mathematics Instruction
- Artificial Intelligence Based Mathematics Learning
- Culturally Responsive Mathematics Teaching

These research activities demonstrate the department's commitment to integrating mathematics with engineering, educational research, and emerging technologies.

5.2.4.5 Research Productivity

The Mathematics Education Department has established one of the strongest research profiles among private higher education institutions in Oman. Since 2020, academic staff have produced:

- 229 peer reviewed journal publications
- 2 scholarly books
- 1 book chapter

This sustained scholarly productivity reflects an active research culture with significant contributions to mathematics, mathematics education, engineering applications, and interdisciplinary scientific research.

5.2.4.6 Research Funding and External Collaboration

The department has successfully secured competitive research funding through the Ministry of Higher Education, Research and Innovation (MoHERI) Block Funding Scheme.

Funded projects have supported research in heart disease diagnosis, neural network encryption, convective heat transfer in hybrid nanofluids, and mathematical sciences. During the reporting period, the department secured research funding totaling OMR 28,700, with projects typically extending over two years.

The diversity of funded projects demonstrates the department's growing research capacity and its contribution to national priorities through interdisciplinary mathematical research.

5.2.4.7 Student Research and Future Opportunities

The department actively promotes both undergraduate and postgraduate research. Between 2022 and 2025, undergraduate students completed 28 final year projects, demonstrating sustained engagement in research based learning and the practical application of mathematics.

The department also maintains an active postgraduate research program in Mathematics Education. During the reporting period, 23 Master's theses were completed, covering a broad spectrum of topics including mathematics education, artificial intelligence, STEAM education, mathematical thinking, problem solving, educational leadership, professional development, curriculum studies, emotional intelligence, and technology enhanced learning.

These postgraduate research activities demonstrate the department's significant contribution to educational research and the preparation of highly qualified mathematics educators for the Sultanate of Oman.

5.2.4.8 Conclusion

Mathematics at Sohar University represents one of the strongest mathematics profiles among Oman's private higher education institutions. Through the Mathematics Education Department and the Foundation Program, the university supports undergraduate education, postgraduate research, mathematics teacher preparation, and interdisciplinary scientific research.

Supported by 28 PhD qualified academics and five Master's degree holders, the department has established an extensive research portfolio, producing 229 peer reviewed journal publications, two scholarly books, and one book chapter since 2020. The department has also secured OMR 28,700 in competitive research funding, established multiple active research groups, supervised 23 Master's theses, and completed 28 undergraduate final year projects during the reporting period.

The breadth of research, from pure and applied mathematics to mathematical modelling, artificial intelligence, quantum information, nanofluid mechanics, engineering analysis, and mathematics education, demonstrates the department's increasingly interdisciplinary role in addressing scientific, technological, and educational challenges. Collectively, these achievements position Sohar University as one of the leading private institutions contributing to mathematics education, mathematical research, and innovation in support of the objectives of Oman Vision 2040.

5.2.5 Report on Mathematics at the University of Buraimi

5.2.5.1 Introduction

The University of Buraimi, established in 2003, is one of the Sultanate of Oman's private higher education institutions, offering undergraduate and postgraduate programs across a range of disciplines. Mathematics is delivered through the Centre for Foundation Studies (CFS), where it equips students with the quantitative knowledge, logical reasoning, and problem-solving skills required for successful progression into undergraduate study. Mathematics therefore plays an important supporting role in preparing students for academic success across the university's various programs.

5.2.5.2 Mathematics at the Foundation Program

The mathematics component of the Foundation Program is delivered by a team of six academic staff, comprising two Master's degree holders and four Bachelor's degree holders, two of whom are currently pursuing Master's degrees. The program focuses on strengthening students' mathematical foundations and analytical competencies, ensuring that they are well prepared for their chosen fields of study.

Through its dedicated teaching team, the Foundation Program contributes to the university's commitment to student success by providing the essential quantitative skills that underpin learning across multiple disciplines.

5.2.6 Report on Mathematics at the University of Nizwa

5.2.6.1 Introduction

The University of Nizwa, established in 2004, is one of the Sultanate of Oman's leading private universities and has earned increasing national and international recognition for its academic excellence and research performance. As one of the country's major higher education institutions, the university contributes significantly to human capital development, scientific research, and innovation in support of the objectives of Oman Vision 2040.

Within this academic environment, mathematics serves as both a core academic discipline and a supporting field across several colleges. Mathematics contributes to education and research in the College of Arts and Sciences, the College of Engineering and Architecture, the College of Economics, Management and Information Systems, and teacher education programmes. Through this multidisciplinary role, mathematics supports scientific inquiry, engineering applications, quantitative analysis, data driven decision making, and mathematics education.

The Department of Mathematics, Physics and Statistics, within the College of Arts and Sciences, represents the University's principal center for mathematics education and research. Together with the Foundation Program, it provides a comprehensive mathematical environment that supports undergraduate education, research, and interdisciplinary collaboration.

5.2.6.2 Mathematics Education at the University of Nizwa

Mathematics at the University of Nizwa extends beyond the Foundation Program and forms an integral component of undergraduate education across multiple academic disciplines.

The Foundation Program equips students with the mathematical knowledge and quantitative reasoning skills required for successful progression into undergraduate study. Following completion of the Foundation Program, students continue their mathematical studies through discipline-specific courses supporting programmes in mathematics, engineering, economics, information systems, and other scientific fields.

The Department of Mathematics, Physics and Statistics offers undergraduate education while providing mathematical support across several colleges. Through this integrated structure, mathematics contributes to developing students' analytical thinking, modelling capabilities, computational skills, and problem-solving competencies required for both academic and professional success.

5.2.6.3 Academic Staff Profile

The mathematics community at the University of Nizwa consists of academic staff serving both the Department of Mathematics, Physics and Statistics and the Foundation Program.

The Department is supported by 14 PhD qualified faculty members, while the Foundation Program includes 7 Master's degree holders, giving a total mathematics teaching community of 21 academic staff.

This strong academic base provides the expertise required to support undergraduate teaching, curriculum development, research supervision, and interdisciplinary research across the University.

5.2.6.4 Research Profile

The University of Nizwa has established a diverse and active mathematics research environment that combines fundamental mathematical sciences with interdisciplinary applications addressing national and global challenges.

5.2.6.4.1 Research Areas

Research activities encompass a broad spectrum of pure and applied mathematics, including:

- Mathematical Physics
- General Relativity and Modified Gravity
- Astrophysics and Cosmology
- Mathematical Modelling
- Fluid Mechanics and Fluid Dynamics
- Computational Mathematics
- Numerical Analysis
- Algebra
- Analysis
- Geometry
- Topology
- Knot Theory
- Mathematical Chemistry
- Discrete Mathematics
- Educational Mathematics
- Hydrodynamic and Hydromagnetic Stability
- Environmental Modelling
- Computational Sustainability
- CO_2 Capture, Storage and Enhanced Oil Recovery

The diversity of these research themes demonstrates the department's ability to integrate theoretical mathematics with engineering, environmental science, sustainability, and industrial applications.

5.2.6.4.2 Research Groups

To support collaborative research, the Department has established thirteen formally registered research groups covering mathematics and its interdisciplinary applications.

These groups address topics including mathematical physics, fluid mechanics, computational mathematics, topology, algebra, mathematical chemistry, environmental modelling, educational mathematics, computational sustainability, and energy related mathematical modelling.

The breadth of these research groups reflects the University's commitment to collaborative research and the application of mathematical sciences to national development priorities.

5.2.6.5 Research Productivity

Between 2020 and 2025, the Department produced 144 peer reviewed research publications, demonstrating sustained scholarly activity and an active research culture.

The publications span both pure and applied mathematics and include contributions to computational mathematics, mathematical modelling, numerical analysis, geometry, topology, fluid mechanics, environmental modelling, and interdisciplinary scientific research.

5.2.6.6 Research Funding and External Collaboration

The available departmental data indicate that mathematics research is supported primarily through collaborative research activities associated with the Department's research groups.

The strong alignment of research themes with national priorities, including energy, environmental sustainability, computational modelling, and applied mathematical sciences, provides a solid foundation for expanding future national and international research collaborations and competitive funding opportunities.

5.2.6.7 Student Research and Future Opportunities

The Department demonstrates a strong culture of undergraduate research through an expanding Final Year Project program.

Between the academic years 2020/2021 and 2025/2026, a total of 946 Final Year Projects were completed, reflecting sustained student engagement with mathematical research and its applications.

The breadth of project topics mirrors the Department's research strengths and provides students with opportunities to develop research skills, analytical thinking, and practical problem-solving abilities across both pure and applied mathematics.

The Department is therefore well positioned to further strengthen undergraduate research while expanding opportunities for postgraduate supervision and international research collaboration.

5.2.6.8 Conclusion

The University of Nizwa has developed one of the strongest mathematics environments among Oman's private higher education institutions. Through the Department of Mathematics, Physics and Statistics and the Foundation Program, mathematics supports undergraduate education across multiple academic disciplines while maintaining an active and diverse research profile.

Supported by 21 academic staff, including 14 PhD qualified faculty members, the Department has established 13 research groups, produced 144 peer reviewed publications since 2020, and supervised 946 undergraduate Final Year Projects, demonstrating a vibrant culture of teaching, research, and student engagement.

The breadth of research, from pure mathematics and computational mathematics to environmental modelling, fluid dynamics, mathematical physics, and sustainability, illustrates the University's commitment to interdisciplinary research and its growing contribution to Oman's scientific development.

With its strong academic foundation, active research groups, and expanding student research activities, the University of Nizwa is well positioned to continue strengthening its contribution to mathematics education, research, innovation, and the objectives of Oman Vision 2040.

5.3 Mathematics in Private Higher Education Colleges in Oman: Institutional Profiles

5.3.1 Mathematics at Al Buraimi University College (BUC): An Institutional Profile

5.3.1.1 Introduction

Established in 2003, Al Buraimi University College (BUC) is one of Oman's private higher education institutions, offering programs in Information Technology, Business Administration and Accounting, Law, and related fields. Within this academic environment, mathematics serves primarily as a supporting discipline embedded within academic departments rather than as a standalone department.

Mathematics teaching is mainly integrated within the Department of Information Technology and the Department of Business Administration and Accounting. Through this structure, mathematics supports students' quantitative reasoning, analytical thinking, and problem-solving skills across computing, business, and applied fields.

5.3.1.2 Mathematics Education

Mathematics at BUC functions as a service discipline supporting undergraduate education. Although the college does not currently offer a specialized degree in mathematics, mathematical knowledge remains an essential component of several programs, particularly those requiring logical reasoning, quantitative analysis, and decision-making. This integrated model reflects the enabling role of mathematics in professionally oriented higher education.

5.3.1.3 Academic Capacity

The available data indicate that mathematics teaching is supported by doctoral-qualified academics embedded within different departments. The Department of Information Technology includes one PhD-

qualified academic involved in mathematics teaching, while the Department of Business Administration and Accounting includes one additional PhD-qualified academic supporting mathematics-related courses.

Although the mathematics teaching community is relatively small, the presence of doctoral-qualified staff provides a sound foundation for teaching and future scholarly development.

5.3.1.4 Research and Scholarly Activity

Mathematics-related research at BUC is currently interdisciplinary rather than organized through a dedicated mathematics research unit. The available data suggest connections with artificial intelligence, smart systems, and quantitative business applications.

The college has established several interdisciplinary research groups that may support mathematics-related research, including:

- BUC Artificial Intelligence Research Group
- BUC Smart Systems Research Group
- BUC Quantitative Accounting Research Group

These groups provide opportunities for mathematical modeling, optimization, computational methods, and quantitative analysis to contribute to broader interdisciplinary research.

The available data indicate two peer-reviewed journal publications and two additional accepted papers by mathematics-related academic staff.

5.3.1.5 Institutional Assessment

Mathematics at BUC may be characterized as an **emerging interdisciplinary academic area**. Its strengths include doctoral-qualified staff, integration across multiple departments, and links to interdisciplinary research groups. Future development could focus on increasing publication output, establishing structured mathematics-related research collaborations, and seeking external research funding.

5.3.2 Mathematics at Bayan College: An Institutional Profile

5.3.2.1 Introduction

Established in 2006, Bayan College is one of Oman's private higher education institutions, offering programs in media, communication, business, and related disciplines. Mathematics is delivered primarily through the General Foundation Program, where it supports students' transition into undergraduate study.

Within Bayan College, mathematics serves as a foundational subject that develops quantitative reasoning, logical thinking, and problem-solving skills required for academic success.

5.3.2.2 Mathematics Education

Mathematics at Bayan College is offered mainly through the General Foundation Program rather than as a specialized academic program. Its purpose is to strengthen students' mathematical readiness before they enter undergraduate programs.

Although the college does not offer a specialized degree in mathematics, the Foundation Program provides an important academic pathway that supports student progression and prepares learners for disciplines requiring analytical and quantitative competencies.

5.3.2.3 Academic Capacity

The available data indicate that mathematics teaching within the Foundation Program is supported by one PhD-qualified academic. No separate mathematics department staff or Master's-level mathematics staff were reported. The presence of doctoral-qualified expertise provides a strong academic basis for mathematics instruction within the Foundation Program.

5.3.2.4 Research and Scholarly Activity

The available data do not report formal mathematics research groups, mathematics specific publications, funded projects, final-year projects, or postgraduate research in mathematics.

This indicates that mathematics at Bayan College is currently in a teaching-oriented stage, with its primary contribution directed toward student preparation rather than specialized research activity.

5.3.2.5 Institutional Assessment

Mathematics at Bayan College is best described as a foundation focused teaching area. Its principal strength lies in supporting student readiness for undergraduate education. Future development may include integrating quantitative methods into interdisciplinary research, particularly in educational assessment, statistics, communication analytics, and data-informed studies.

5.3.3 Mathematics at the Global College of Engineering and Technology (GCET): An Institutional Profile

5.3.3.1 Introduction

Established in 2014, the Global College of Engineering and Technology (GCET) is a private higher education institution specializing in engineering, technology, and applied disciplines. Mathematics plays an essential role in supporting engineering education by providing students with the quantitative and analytical skills required for technical learning.

Mathematics is delivered through academic programs and the Foundation Studies Department, creating a pathway from preparatory mathematics to discipline-specific mathematical applications.

5.3.3.2 Mathematics Education

At GCET, mathematics functions primarily as a service discipline supporting engineering and technology programs. Within the Foundation Studies Department, mathematics equips students with essential quantitative skills before they progress into specialized undergraduate studies.

Following the Foundation Program, mathematics continues through courses embedded in engineering and technology curricula, where students apply mathematical concepts to analysis, modeling, and technical problem-solving.

5.3.3.3 Academic Capacity

The available data indicate that the mathematics teaching staff within academic programs include two Master's degree holders. The Foundation Studies Department is supported by three PhD-qualified academics and nine Master's degree holders.

This provides GCET with a strong teaching base, particularly at the foundation level, and supports the delivery of mathematics across preparatory and undergraduate stages.

5.3.3.4 Research and Scholarly Activity

Mathematics-related research activity at GCET appears to be emerging within broader engineering and educational contexts. One relevant institutional research group was reported:

- Education and Community Research Group

Since 2020, one mathematics-related peer-reviewed publication has been reported: *Enhanced Oil Recovery Techniques: A Comparative Analysis of Chemical and Thermal Methods Under Different Reservoir Conditions* (2025). This indicates the application of analytical and quantitative methods within engineering related research.

No mathematics specific externally funded projects or postgraduate mathematics activities were reported.

5.3.3.5 Institutional Assessment

Mathematics at GCET may be characterized as a **teaching-oriented area with emerging applied research potential**. Its strengths include a qualified Foundation Studies Department, relevance to engineering programs, and potential for applied research in modeling, simulation, optimization, and engineering analysis.

5.3.4 Mathematics at Gulf College: An Institutional Profile

5.3.4.1 Introduction

Established in 1990, Gulf College is one of Oman's private higher education institutions offering programs in business, computing, engineering, and related disciplines. Mathematics is delivered primarily through the Centre for Foundation Studies, where it supports students' academic readiness and progression into undergraduate study. Mathematics plays a foundational role in developing students' quantitative reasoning, logical thinking, and problem-solving skills across multiple fields.

5.3.4.2 Mathematics Education

Mathematics at Gulf College is offered mainly through the Centre for Foundation Studies. Although the college does not offer a specialized degree in mathematics, the subject remains an important component

of undergraduate preparation and supports programs in business, computing, engineering, and applied disciplines.

5.3.4.3 Academic Capacity

The available data indicate that the Centre for Foundation Studies is supported by two PhD-qualified academics and one Master's degree holder. This provides a strong academic foundation for mathematics instruction within the Foundation Program.

5.3.4.4 Research and Scholarly Activity

Although no formal mathematics research groups or funded mathematics projects were reported, Gulf College has demonstrated scholarly activity through 14 peer-reviewed journal publications since 2020.

This publication record indicates that mathematics-related academic staff are engaged in research despite the absence of a dedicated mathematics department or specialized mathematics degree program.

5.3.4.5 Institutional Assessment

Mathematics at Gulf College may be described as a foundation-based teaching area with demonstrated scholarly productivity. Its main strengths are qualified faculty and a notable publication record. Future development could focus on organizing research activity into formal research clusters and seeking external funding for mathematics-related projects.

5.3.5 Mathematics at the International College of Engineering and Management (ICEM): An Institutional Profile

5.3.5.1 Introduction

Established in 1995, the International College of Engineering and Management (ICEM) is a private higher education institution specializing in engineering, technology, aviation, logistics, and applied sciences. Mathematics serves as an enabling discipline that supports engineering and technology education.

Mathematics is delivered through the Higher Education Departments and the Foundation Program, providing students with the analytical and quantitative competencies required for technical study.

5.3.5.2 Mathematics Education

Mathematics at ICEM primarily functions as a supporting discipline rather than as a standalone academic program. It prepares students for undergraduate study through the Foundation Program and continues to support engineering and technology courses at higher levels. This structure ensures that students acquire the mathematical foundations needed for engineering analysis, scientific reasoning, and technical applications.

5.3.5.3 Academic Capacity

The Higher Education Departments are supported by five academic staff holding Master's degrees, while the Foundation Program includes two Master's degree holders. No PhD-qualified mathematics staff were reported in the available data.

Despite its relatively small mathematics team, ICEM provides essential teaching support across engineering and technology programs.

5.3.5.4 Research and Scholarly Activity

ICEM does not currently have a dedicated mathematics research program. However, the college has established interdisciplinary research groups that may provide opportunities for mathematical applications. These include:

- Smart and Sustainable Built Environment
- Applied Fire Behavior and Material Research
- Environmental Research
- Personal and Professional Development and Entrepreneurship
- Renewable Energy and Digital Fabrication

Although these groups are not mathematics-specific, they offer potential platforms for mathematical modeling, data analysis, optimization, simulation, and computational methods.

No mathematics specific peer reviewed publications, funded projects, final-year projects, or postgraduate mathematics research were reported.

5.3.5.5 Institutional Assessment

Mathematics at ICEM may be characterized as a teaching-support discipline within an engineering-focused institution. Its main potential lies in linking mathematics more explicitly with existing applied research groups in engineering, sustainability, digital fabrication, and environmental studies.

5.3.6 Mathematics at Mazoon College: An Institutional Profile

5.3.6.1 Introduction

Established in 1999, Mazoon College is one of Oman's private higher education institutions offering programs in computing, business, and related disciplines. Mathematics functions as a supporting discipline across academic departments, particularly within the Computing and Informatics Department, the Economics and Business Studies Department, and the General Foundation Department. This structure enables mathematics to support quantitative reasoning, data analysis, and problem-solving across computing and business-related fields.

5.3.6.2 Mathematics Education

Mathematics at Mazoon College is offered primarily as a service discipline supporting undergraduate education. Although there is no specialized mathematics degree program, mathematics remains relevant to computing, economics, business, statistics, and data-informed decision-making.

5.3.6.3 Academic Capacity

The available data indicate that mathematics teaching within the Computing and Informatics Department is supported by one academic staff member holding a Master's degree. Additional mathematics-related

expertise is associated with statistics in the Economics and Business Studies Department and the General Foundation Department.

5.3.6.4 Research and Scholarly Activity

Mazoon College demonstrates mathematics-related research activity through interdisciplinary areas as:

- Mathematical Programming
- Sample Surveys
- Machine Learning

Since 2020, mathematics-related academic staff have reported 19 peer-reviewed journal publications, including 15 associated with the Computing and Informatics Department and 4 associated with the Economics and Business Studies Department.

Although no formal mathematics research groups or externally funded mathematics projects were reported, the publication record demonstrates active scholarly engagement.

5.3.6.5 Institutional Assessment

Mathematics at Mazoon College may be characterized as an interdisciplinary research-support area with notable publication activity. Its strengths include research links with machine learning, mathematical programming, and survey methodology. Future development could focus on formalizing research clusters and expanding externally funded projects.

5.3.7 Mathematics at the Modern College of Business and Science (MCBS): An Institutional Profile

5.3.7.1 Introduction

The Modern College of Business and Science (MCBS) has one of the more developed mathematics profiles among Oman's private higher education institutions. Mathematics at MCBS plays a dual role: it supports general undergraduate education and also contributes to specialized education through the Bachelor of Science in Statistics offered by the Mathematics Section within the Department of Mathematics and Computer Science.

This distinguishes MCBS from many private institutions where mathematics is limited primarily to foundation or service teaching.

5.3.7.2 Mathematics Education

The Mathematics Section at MCBS offers a Bachelor of Science in Statistics and also teaches mathematical course requirements for other disciplines. In addition, mathematics is supported through the Foundation Program, which prepares students with essential quantitative and analytical competencies before they enter undergraduate study.

This structure enables MCBS to combine specialized statistical education with mathematics service teaching across the college.

5.3.7.3 Academic Capacity

The Mathematics Section includes faculty with expertise in statistics, mathematics, applied mathematics, and econometrics. Reported research interests include algebra and its applications, applied mathematics, financial mathematics, financial econometrics, statistical modeling, stochastic modeling, statistical learning, mathematics education, and the circular economy.

The Foundation Program includes staff specializing in mathematics, statistics, and data science. This breadth of expertise supports teaching, research, and interdisciplinary collaboration.

5.3.7.4 Research and Scholarly Activity

MCBS has a strong mathematics-related research profile covering algebra, applied mathematics, statistics, econometrics, mathematics education, data science, financial mathematics, Bayesian modeling, machine learning, and artificial intelligence.

Since 2020, faculty members have produced 17 scholarly publications, including journal articles, conference papers, and book chapters. The Mathematics Section has also secured external funding through MoHERI for the project titled *Post-Pandemic Mathematics Education: How Online Teaching Challenges Shape the Future of Mathematics Education in Oman*, with funding of OMR 4,600.

In addition, the MCBS Mathematics Club, established in 2013, has supported student engagement through workshops, webinars, and annual mathematics competitions. Since 2020, five competitions have been organized, covering calculus, linear algebra, probability, and statistics.

5.3.7.5 Institutional Assessment

Mathematics at MCBS may be characterized as an advanced private-sector mathematics profile with specialized academic provision and active scholarly engagement. Its strengths include a Statistics degree, diverse faculty expertise, peer-reviewed publications, funded research, and sustained student activities. Future development could focus on expanding undergraduate research, strengthening statistics-based applied research, and exploring postgraduate pathways in statistics, data science, or applied mathematics.

5.3.8 Mathematics at Muscat College: An Institutional Profile

5.3.8.1 Introduction

Established in 1996, Muscat College is one of Oman's private higher education institutions offering programs in business, engineering, computing, logistics, and related disciplines. Mathematics is delivered primarily through the Centre for Foundation and Preparatory Studies, where it supports students' academic readiness for undergraduate education.

5.3.8.2 Mathematics Education

Mathematics at Muscat College functions mainly as a Foundation Program subject. It provides students with the mathematical competence, logical reasoning, and problem-solving abilities required for progression into specialized programs.

Although the college does not offer a specialized mathematics degree, mathematics remains important for supporting disciplines that require analytical and quantitative skills.

5.3.8.3 Academic Capacity

The available data indicate that the Foundation Program is supported by one academic staff member holding a Master's degree. No PhD-qualified mathematics staff or separate mathematics department staff were reported.

5.3.8.4 Research and Scholarly Activity

No mathematics-specific peer-reviewed publications were reported since 2020. However, the college has secured MoHERI funding for broader interdisciplinary research projects in Educational Psychology and Educational Technology, and Strategic Management and Innovation in the Energy Sector.

The total reported research funding is OMR 5,900. While these projects are not mathematics-specific, they demonstrate institutional experience in securing research funding and may provide future opportunities for quantitative and mathematical contributions.

5.3.8.5 Institutional Assessment

Mathematics at Muscat College may be characterized as a foundation-based teaching area within an institution that has broader interdisciplinary research activity. Its future potential lies in connecting mathematics with educational technology, data analysis, management analytics, and innovation studies.

5.3.9 Mathematics at the National College of Automotive Technology (NCAT): An Institutional Profile

5.3.9.1 Introduction

Established in 2017, the National College of Automotive Technology (NCAT) is a specialized institution focused on automotive and technical education. Mathematics plays a foundational role in supporting technical training, engineering calculations, and applied problem-solving.

Mathematics is delivered primarily through the Department of Foundation Program, where students develop the quantitative competencies required for technical study and professional practice.

5.3.9.2 Mathematics Education

Mathematics at NCAT supports automotive and technical education by developing students' numerical proficiency, logical reasoning, and analytical thinking. Although NCAT does not offer a specialized mathematics degree, mathematics remains essential to technical learning and applied engineering contexts.

5.3.9.3 Academic Capacity

The available data indicate one PhD-qualified academic associated with mathematics, while the Foundation Program is supported by three PhD-qualified academics and three Master's degree holders.

This represents a strong academic base for foundation-level teaching within a specialized technical institution.

5.3.9.4 Research and Scholarly Activity

No formal mathematics research groups, peer reviewed publications, funded projects, final-year projects, or postgraduate mathematics activities were reported in the available data. This suggests that mathematics at NCAT is focused primarily on teaching and technical preparation rather than research.

5.3.9.5 Institutional Assessment

Mathematics at NCAT may be characterized as a technical-support foundation discipline. Its strength lies in supporting industry-oriented education. Future opportunities may include applied research in automotive systems, engineering modeling, simulation, optimization, manufacturing processes, and technical education.

5.3.10 Mathematics at Oman College of Management and Technology (OCMT): An Institutional Profile

5.3.10.1 Introduction

Established in 2004, Oman College of Management and Technology (OCMT) is a private higher education institution offering programs in business, information technology, and related disciplines. Mathematics is delivered primarily through the General Foundation Program, where it supports students' quantitative readiness for undergraduate study.

5.3.10.2 Mathematics Education

Mathematics at OCMT functions as a supporting subject within the Foundation Program. It provides students with essential mathematical knowledge, quantitative reasoning, and problem-solving skills required for progression into business, information technology, and applied programs. Although the college does not offer a specialized degree in mathematics, the subject contributes to the development of analytical thinking and academic preparedness.

5.3.10.3 Academic Capacity

The available data indicate that the Foundation Program is supported by one academic staff member holding a Master's degree. No PhD-qualified mathematics staff or separate mathematics department staff were reported.

5.3.10.4 Research and Scholarly Activity

Since 2020, mathematics-related scholarly output includes one Scopus-indexed paper and two academic books. No formal mathematics research groups or funded mathematics projects were reported. This indicates individual scholarly engagement rather than structured departmental research activity.

5.3.10.5 Institutional Assessment

Mathematics at OCMT may be characterized as a foundation based teaching area with individual scholarly output. Its strengths include contribution to student readiness and evidence of academic

publication. Future development may focus on collaborative research in business analytics, quantitative methods, data analysis, and information technology.

5.3.11 Mathematics at the Scientific College of Design (SCD): An Institutional Profile

5.3.11.1 Introduction

Established in 2004, the Scientific College of Design (SCD) is a private higher education institution specializing in design, architecture, engineering-related fields, and creative disciplines. Mathematics is delivered through the Department of English Language, Basic Sciences and Humanities, where it supports students' quantitative and analytical preparation.

5.3.11.2 Mathematics Education

Mathematics at SCD functions primarily as a supporting subject within foundation and undergraduate education. It contributes to students' logical reasoning, problem-solving, and analytical capabilities, particularly in fields where design, architecture, and applied sciences intersect with measurement, spatial reasoning, and computational thinking.

Although SCD does not offer a specialized mathematics degree, mathematics remains relevant to the academic preparation of students in design and applied disciplines.

5.3.11.3 Academic Capacity

The available data indicate that mathematics teaching is supported by one PhD-qualified academic within the Foundation Program. No Master's-level mathematics staff were reported.

5.3.11.4 Research and Scholarly Activity

Since 2020, mathematics-related academic staff have reported five peer-reviewed journal publications. No formal mathematics research groups or mathematics-specific funded projects were reported.

This publication activity demonstrates individual scholarly engagement and provides a basis for further interdisciplinary research development.

5.3.11.5 Institutional Assessment

Mathematics at SCD may be characterized as a supporting academic area with emerging scholarly activity. Its strengths include doctoral-qualified expertise and reported publications. Future opportunities include collaboration in computational design, optimization, spatial modeling, data analysis, and educational research.

6. National Leadership and International Engagement: The Oman Mathematical Committee

The Oman Mathematical Committee (OMC), hosted by Sultan Qaboos University, serves as the national body responsible for coordinating and promoting the advancement of mathematics in the Sultanate of Oman. As the official representative of Oman to the International Mathematical Union (IMU), the Committee plays a strategic role in strengthening mathematics education, research, scientific communication, and international collaboration. Through close partnerships with universities, higher education institutions, schools, and international organizations, the Committee contributes to building a coherent national mathematics ecosystem that supports the objectives of Oman Vision 2040 and enhances Oman's visibility within the global mathematical community.

6.1 National Coordination and Leadership

The Committee serves as the principal national platform for bringing together mathematicians, mathematics educators, researchers, and higher education institutions across the Sultanate. It promotes cooperation among universities, supports national initiatives in mathematics education and research, facilitates communication with international mathematical organizations, and strengthens the visibility and impact of Omani mathematics at both the national and international levels.

In addition to its representative role within the IMU, the Committee contributes, upon request, to the review of mathematics curricula and educational resources, supports mathematics-related initiatives across different educational sectors, and encourages collaboration among higher education institutions, government agencies, and the wider mathematical community. Through these activities, the Committee helps foster a coordinated national approach to the advancement of mathematics.

6.2 Research Development and Scientific Networking

One of the Committee's most significant achievements has been the establishment of the **OMC Weekly Research Webinars (OMC-WRW)**, which have become a regular international platform for scientific exchange between Omani researchers and distinguished mathematicians from around the world.

The webinar series has hosted speakers from leading universities and research institutions across North America, Europe, Asia, Australia, Africa, and the Middle East. The lectures have covered a broad spectrum of mathematical sciences, including algebra, analysis, geometry, topology, numerical analysis, differential equations, optimization, operations research, mathematical modelling, computational mathematics, artificial intelligence, machine learning, statistics, data science, and mathematics education.

The webinar program has also provided increasing opportunities for Omani researchers to present their work alongside internationally recognized scholars, thereby strengthening research visibility, fostering international collaborations, and expanding scientific networks.

6.3 National Conferences and Scientific Activities

The Committee has established a sustainable program of scientific activities that supports both mathematical research and mathematics education.

Its annual activities include **Oman Mathematics Day**, the **Mathematics Research Forum**, the **Mathematics Education Forum**, and the **Mathematics Research Projects Forum**, in addition to specialized workshops and international scientific meetings. The Committee also collaborates in organizing major international conferences, including the **International Conference on Numerical Analysis and Optimization (NAO)**, and supports the organization of thematic workshops and conferences in emerging areas of mathematics.

These recurring activities provide regular opportunities for researchers, academics, teachers, and students to exchange knowledge, present research findings, establish collaborations, and strengthen the national mathematical community.

6.4 Mathematics Education and Capacity Building

The Committee actively contributes to strengthening mathematics education across the Sultanate through a wide range of educational and professional development initiatives.

Its activities include supporting curriculum development, contributing to the review of mathematics textbooks and educational resources upon request, organizing workshops and professional development programmes for mathematics teachers and university faculty, and promoting evidence-based teaching practices through scientific seminars and educational initiatives.

The Committee also supports activities that encourage student engagement with mathematics, promotes excellence in mathematics education, and strengthens collaboration between schools, universities, and educational institutions to enhance the quality of mathematics teaching and learning.

6.5 International Collaboration

International collaboration represents one of the defining characteristics of the Committee's activities.

Through its scientific programmes, conferences, and webinar series, the Committee has established academic collaborations with researchers from universities and research institutions across the United States, the United Kingdom, Australia, Finland, the Czech Republic, Belgium, Turkey, Egypt, Iran, India, Qatar, Saudi Arabia, the United Arab Emirates, South Korea, Nigeria, France, Russia, Cyprus, Japan, and many other countries.

These collaborations have significantly expanded opportunities for scientific exchange, strengthened the international visibility of Omani mathematicians, and created new avenues for collaborative research involving researchers from Oman and abroad.

The Committee also actively supports Oman's participation in programmes and initiatives organized by the International Mathematical Union and other international mathematical organizations, reinforcing the country's growing engagement within the global mathematical community.

6.6 Community Engagement and Outreach

The Committee is committed to promoting mathematics beyond academia through initiatives that strengthen public appreciation of mathematics and encourage wider participation in mathematical activities.

Its outreach program includes the annual celebration of **Oman Mathematics Day**, public lectures, student activities, research exhibitions, school engagement programmes, and collaborations with higher education institutions. These initiatives promote mathematical culture, encourage young people to pursue mathematics and related disciplines, and demonstrate the important role of mathematics in innovation, scientific advancement, and sustainable development.

Through its national coordination, scientific programmes, educational initiatives, international partnerships, and community engagement activities, the Oman Mathematical Committee has become a central driving force in advancing mathematics in the Sultanate of Oman. Its continued efforts contribute to strengthening research excellence, enhancing mathematics education, expanding international cooperation, and reinforcing Oman's position as an active and valued member of the global mathematical community.

Appendices

Appendix A. National Statistical Summary (2020–2025)

This appendix provides a consolidated statistical summary of mathematics across the major universities included in this report for the period 2020–2025. It presents key indicators of academic staffing, research activity, publications, funding, and student research, complementing the institutional profiles presented in the main body of the report.

I. National Statistical Summary of Mathematics Capacity in Omani Universities (2020–2025)

The following table brings together the institutional data presented throughout this report into a single national-level comparative view.

Table A1. National Overview of Mathematics in Omani Universities

University	PhD Staff	MSc Staff	Research Groups	Peer-Reviewed Publications	Research Funding (OMR) (USD)	Final-Year Projects	MSc Research	PhD Research
Sultan Qaboos University	50	17	5	461	≈ 67,000 OMR ≈ 174,000 USD	109	46 thesis records	50 thesis records
University of Technology and Applied Sciences (UTAS)	98	68	20	985	≈150,000 OMR ≈392,000 USD	Rustaq Branch 7	N/A	N/A
A'Sharqiyah University	12	13	11	177	≈24,300 OMR ≈63,000 USD	8	3	N/A
Dhofar University	6	0	1	120	≈12,000 OMR ≈31,000 USD	21	0	0
Sohar University	28	5	10	229	≈28,700 OMR ≈74,500 USD	28	23	0
University of Buraimi	0	2	0	N/A	N/A	N/A	N/A	N/A

Explanation. Table A.1 presents a consolidated national overview of mathematics related academic capacity across Omani universities for the standardized reporting period 2020–2025. The table summarizes the number of PhD and MSc academic staff, research groups, peer-reviewed publications, research funding, final-year projects, and postgraduate research outputs (MSc and PhD) reported by each institution. The figures were compiled directly from the institutional profiles included in this report to provide a consistent basis for national comparison and to highlight the current distribution of research capacity and scholarly activity in mathematics across the participating universities.

Notes

- Reporting period standardized to 2020–2025.
- Figures are taken directly from the institutional profiles included in this report.
- N/A indicates that data were not available or not applicable.
- Dhofar University reports approximately 20 peer-reviewed publications and OMR 2,000 in research funding annually; therefore, the values shown are approximate totals for the six-year reporting period.

Comparative Graphical Summary of Mathematics in Public Universities (2020–2025)

This appendix presents graphical comparisons of key mathematics indicators across the public universities included in this report for the period 2020–2025. The figure provides a visual summary of academic staff, research productivity, research funding, and other selected indicators, complementing the institutional profiles presented in the main body of the report.

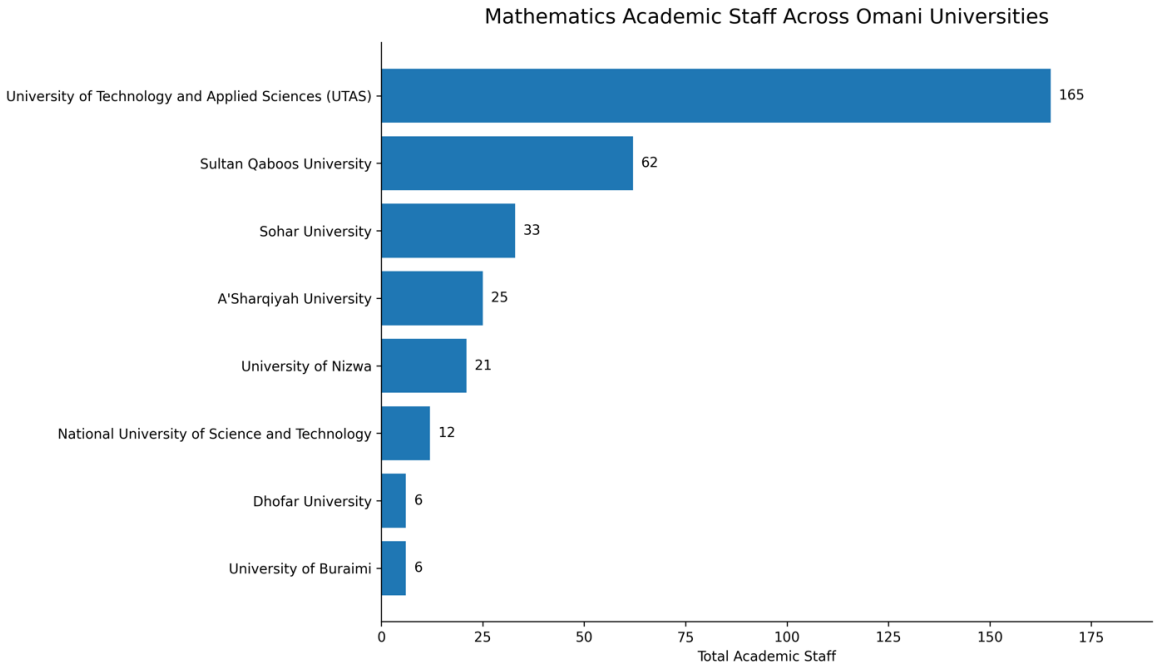

Figure A1. Comparison of Mathematics Academic Staff across Omani Universities (2020–2025).

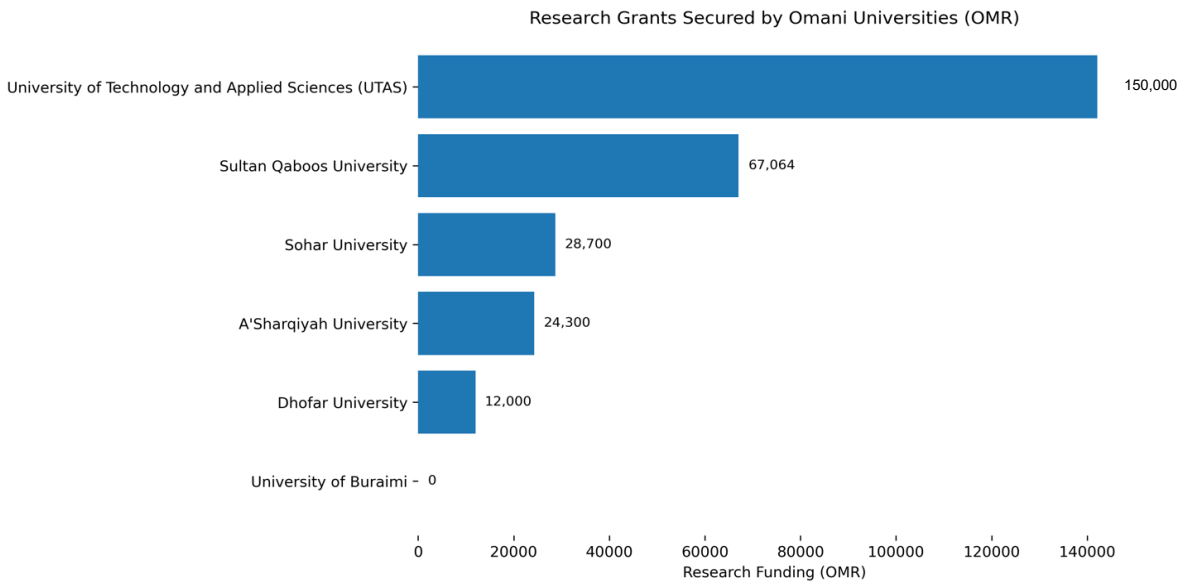

Figure A2. Comparison of Research Funding Secured by Mathematics Units across Omani Universities (2020–2025)

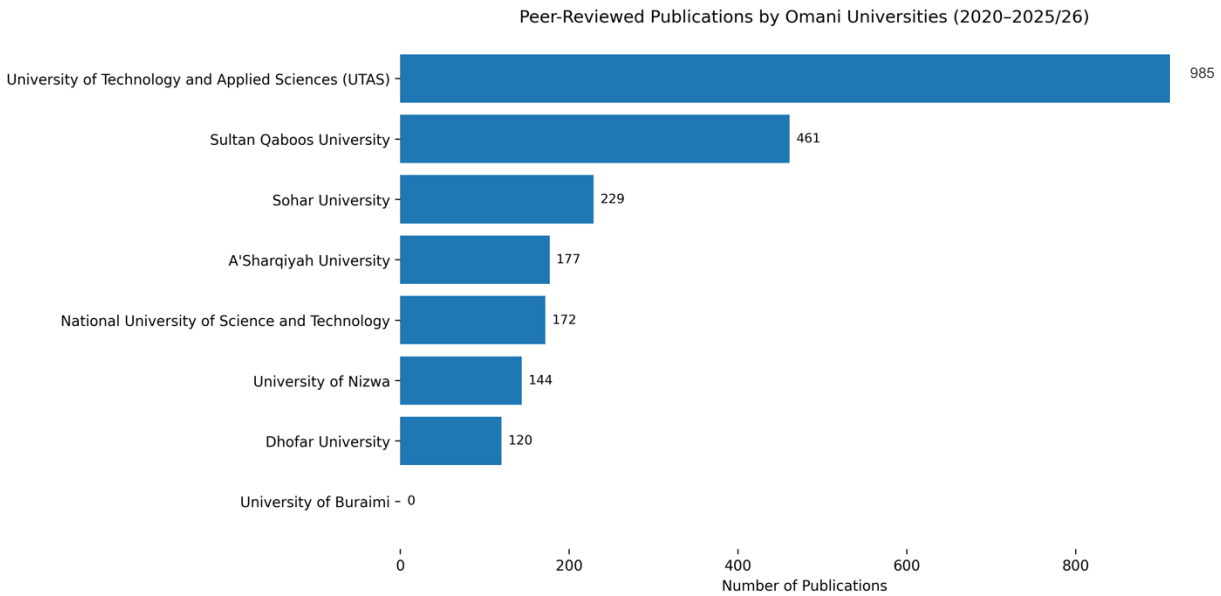

Figure A3. Comparison of Peer-Reviewed Mathematics Publications across Omani Universities (2020–2025)

Interpretation.

The three figures provide a comparative overview of the mathematics capacity across the major Omani universities included in this report. They demonstrate notable variation in institutional size, research productivity, and research funding, reflecting the diversity of institutional missions and stages of

development within the higher education sector. While larger universities maintain the strongest concentration of academic staff and research activity, several other institutions have established active mathematics research environments with growing publication records and competitive research funding. Collectively, these indicators demonstrate the breadth of mathematics education and research across Oman and highlight the increasing contribution of universities to national research capacity, innovation, and the objectives of Oman Vision 2040.

II. Registered Mathematics Research Groups

The following summarizes the formally registered mathematics research groups reported by the universities included in this report for the period 2020 – 2025. The table provides an overview of the research infrastructure supporting mathematics across Oman's higher education sector and reflects the diversity of research activity within the mathematical sciences and their interdisciplinary applications.

Table A2. Registered Mathematics Research Groups by University (2020 – 2025)

University	Registered Mathematics Research Groups
Sultan Qaboos University	4
University of Technology and Applied Sciences (UTAS)	19
A'Sharqiyah University	11
Dhofar University	1
Sohar University	10
University of Nizwa	13
National University of Science and Technology	0
University of Buraimi	0
Total	58

Interpretation. Table C.1 shows that 58 registered mathematics research groups are distributed across the participating Omani universities, demonstrating a well-established national research infrastructure in the mathematical sciences. The largest concentration of research groups is found at the University of Technology and Applied Sciences (19 groups), followed by the University of Nizwa (13 groups), A'Sharqiyah University (11 groups), and Sohar University (10 groups). Sultan Qaboos University maintains four registered research groups, while Dhofar University reports one. At the time of data collection, the National University of Science and Technology and the University of Buraimi did not

report any registered mathematics research groups. Overall, the distribution highlights substantial research capacity across Oman's higher education sector while also indicating opportunities for further development of formal research groups in institutions where such structures are currently limited or absent.

III. Mathematics Academic Staff in Higher Education Private Colleges in the Sultanate of Oman (2026)

The following presents a comparative overview of mathematics academic staff across private higher education institutions in Oman as of 2026. It includes a summary table of academic staff qualifications and graphical comparisons illustrating the distribution of mathematics faculty across institutions.

Table A3: Comparison of Mathematics Academic Staff Qualifications in Higher Education Private Colleges in the Sultanate of Oman (2026)

Private Higher Education Institution (College)	PhD Holders	M.Sc. Holders	Total Staff
Al Buraimi University College	3	0	3
Bayan College	1	0	1
Global College of Engineering and Technology (GCET)	3	11	14
Gulf College	2	1	3
International College of Engineering and Management (ICEM)	0	7	7
Mazoon College	0	1	1
Modern College of Business and Science (MCBS)	8	0	8
Muscat College	0	1	1
National College of Automotive Technology (NCAT)	4	3	7
Oman College of Management and Technology	0	1	1
Scientific College of Design	1	0	1
Total	22	25	47

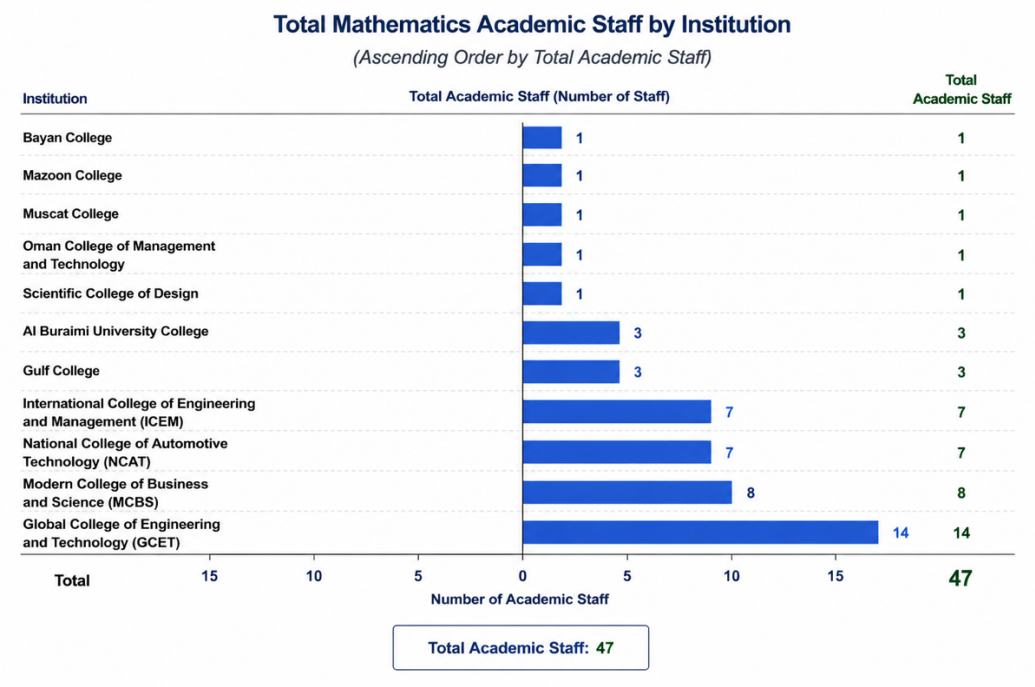

Figure A4. Mathematics Academic Staff by Institution

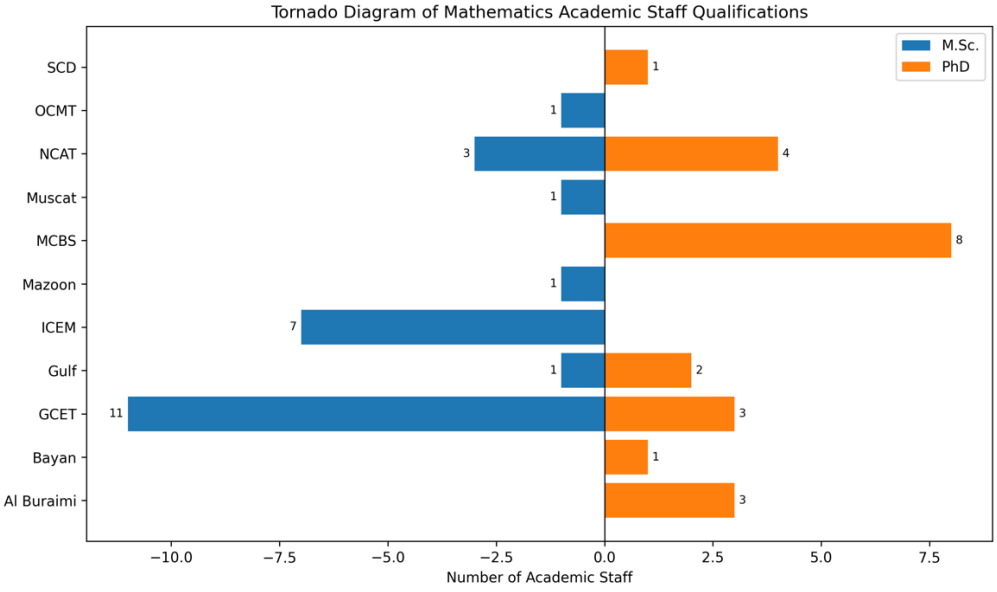

Figure A5. Comparison of PhD and Master's Degree Holders

Interpretation

The data highlight the diversity of mathematics teaching capacity across Oman's private higher education colleges. Collectively, the sector comprises 47 mathematics academics, including 22 PhD holders and 25 Master's degree holders, demonstrating its growing contribution to mathematics education and research capacity.

IV. Selected Mathematics Publications from Oman (2020–2025)

This appendix presents selected publications highlighting mathematical research in Oman between 2020 and 2025. Publications are grouped by year in descending order, from 2025 to 2020, and arranged alphabetically by the first author's surname within each year.

2025 | Selected Research Publications

1. Alam, M. S., Nayon, M. M. P., Islam, T., Hossain, M. S., & Rahman, M. M. (2025). Modeling and optimization of thermal conductivity ratio of Al_2O_3–water nanofluid using artificial neural network and Box-Behnken design based response surface methodology with canonical analysis. *International Journal of Thermofluids, 30*, Article 101426. https://doi.org/10.1016/j.ijft.2025.101426

2. Alam, M. S., Huda, M. N., & Rahman, M. M. (2025). Optimization and modeling of thermal conductivity of Cu–H_2O nanofluid using response surface methodology and artificial neural network: A comparative study between statistical and machine learning approach. *Journal of Nanofluids, 14*(5), 659–671. https://doi.org/10.1166/jon.2025.2267

3. Al Ghafri, M. S., Estaremi, Y., & Gashti, M. Z. (2025). *Isometric and quasi-isometric weighted composition operators* [Preprint]. arXiv. https://doi.org/10.48550/arXiv.2509.16969

4. Alhawarat, A., Sabra, R., Al-Baali, M., El Hor, H., Ismail, S., & Jaradat, A. (2025). A developed version of conjugate gradient method with a new parameter for Dai-Liao conjugacy condition with an application to solar panel. *Journal of Computer Science, 21*(7), 1651–1661. https://doi.org/10.3844/jcssp.2025.1651.1661

5. Alhawarat, A., Masmali, S., Masmali, I., Al-Baali, M., & Ismail, S. (2025). A modified conjugate gradient method with Taylor approximation: Applications in electric circuits and image restoration. *European Journal of Pure and Applied Mathematics, 18*(1), Article 5639. https://doi.org/10.29020/nybg.ejpam.v18i1.5639

6. Al Kasbi, A., Purnama, A., & Al Mashrafi, K. (2025). Analytical modeling of effluent discharges spreading by tidal oscillation currents on a sloping beach. *Mathematical Methods in the Applied Sciences, 48*(5), 5506–5520. https://doi.org/10.1002/mma.10614

7. Al-Kharousi, F., Garba, G. U., Ibrahim, M. J., Imam, A. T., & Umar, A. (2025). On the semigroup of finite order-preserving partial injective contraction mappings. *Afrika Matematika, 36*(1), Article 48. https://doi.org/10.1007/s13370-025-01259-z

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Appendix B. Oman Mathematics Committee Activities

I. Oman Mathematics Committee – Weekly Research Webinars

Table B1.1: OMC-WRW Season 1 (2024 – 2025) -Wednesdays 16:00 Muscat Mean Time (+4 GMT)

Serial #	Date	Moderator	Title	Speaker	Country
S1 – 1	27/11/2024	Dr. Ahmed Al Siyabi, University of Technology and Applied Sciences, Oman	Computational Experiences with Improved Diagonal Updating Methods for Large-Scale Unconstrained Optimization	Prof. Mehi Al Baali Sultan Qaboos University	Oman
S1 – 2	4/12/2024	Prof. Mansur Rahman Sultan Qaboos University, Oman	Semi-Analytical Method for Systems of Nonlinear Differential Equations	Prof. K Vajravelu University of Central Florida	USA
S1 – 3	11/12/2024	Prof. Mehi Al Baali Sultan Qaboos University, Oman	Deceptive Diffusion: Attacking with Generative AI	Prof. Desmond J. Higham University of Edinburgh	UK
S1 – 4	18/12/2024	Prof. Sebti Kerbal Sultan Qaboos University, Oman	Delay Differential Equations and Nevanlinna Theory	Prof. Risto Korhonen University of Eastern Finland	Finland
S1 – 5	25/12/2024	Dr. Mohamed Shahriari Sultan Qaboos University, Oman	Equational Domains	Omar Talib Al Raisi Sultan Qaboos University	Oman
S1 – 6	1/1/2025	Prof. Mehi Al Baali Sultan Qaboos University, Oman	Optimizing Resource Allocation in a Three-Stage Banking Network: A Centralized DEA Approach with Shared, Integer-Valued, & Undesirable Factors	Dr. Reza Matin Sultan Qaboos University	Oman
S1 – 7	8/1/2025	Dr. Deepti Thakur, University of Technology and Applied Sciences, Oman	Mathematical Modeling: A Methodology and Toolset for the Knowledge System.	Prof. Varghese C. Joshua Mahatama Ghandi University	India
S1 – 8	15/1/2025	Dr. Mini Ramdas, University of Technology and Applied Sciences, Oman	An Invitation to the Theory and Problems in Geometric Function Theory	Dr. S. Sunil Varma Madras Christian College	India
S1 – 9	22/1/2025	Dr. Arran Fernandez Sultan Qaboos University, Oman	Digital Geometry	Prof. Benedek Nagy Eastern Mediterranean University	N. Cyprus
S1 – 10	29/1/2025	Dr. Mohamed Shahriari Sultan Qaboos University, Oman	Spherically Ordered Groups	Prof. Sergey Sudoplatov Sobolev Institute of Mathematics	Russia
S1 – 11	5/2/2025	Dr. Mohamed Shahriari Sultan Qaboos University, Oman	On Representation Theory of Twisted Affine Lie Superalgebras	Prof. Maliha Yousof University of Isfahan	Iran
S1 – 12	12/2/2025	Dr. Assma Orabi Suez Canal University, Egypt	A Study of Extensions of Classical Summation Theorems for the Series $_3\boldsymbol{F_2}$ and $_4\boldsymbol{F_3}$ with Applications.	Prof. Medhat Rakha Suez Canal University	Egypt
S1 – 13	19/2/2025	Dr. Reza Matin Sultan Qaboos University, Oman	When the Revenue Function is Nonconcave in the Inputs, then the Technology is Nonconvex: The Unbearable Lightness of Convexity.	Kristiaan kerstens University of Lille.	France
S1 – 14	26/2/2025	Dr. Mohamed Shahriari Sultan Qaboos University, Oman	Examples of Existentially Closed Groups	Mahmut Kuzucuoglu Middle East Technical University	Turkey
S1 – 15	5/3/2025	Prof. Sanjiv Gupta Sultan Qaboos University	Optimal Control of Doubly-Diffusive Flows	Prof. Jai Tushar Monash University,	Australia
S1 – 16	12/3/2025	Dr. Reza Matin Sultan Qaboos University, Oman	TBA	Prof. Abdullahi Umar Khalifa University	UAE
S1 – 17	19/3/2025	Prof. Anton Purnama Sultan Qaboos University, Oman	Mikusiński's Operational Calculus: an Application of Abstract Algebra in Solving Differential Equations	Arran Fernandez Sultan Qaboos University	Oman
S1 – 18	26/3/2025	Dr. Abdul Adheem Al Soodaney Nizwa University, Oman	A Topological Expression of DNA Replication	Dr. A. Al Soodaney Nizwa University Prof. T. Yashiro Independent Math. Institute	Oman Japan
S1 – 19	9/4/2025	Omar Talib Al Raisi Sultan Qaboos University, Oman	The space of finitely generated groups	Dr. Mohamed Shahriari Sultan Qaboos University	Oman
S1 – 20	16/4/2025	Prof. Anton Purnama Sultan Qaboos University, Oman	Direct Reconstruction of a Multidimensional Heat Equation	Prof. Amin Boumenir University of West Georgia	USA
S1 – 21	23/4/2025	Prof. Medhat Rakha Suez Canal University, Egypt	Another Method for Proving Reduction Formulas for the Humbert Function ψ_2 due to Brychkov et al. with an Application.	Dr. Asma Orabi Suez Canal University	Egypt
S1 – 22	30/4/2025	Dr. Abdul Wahab Sultan Qaboos University, Oman.	Application of MUSIC Algorithm in Real-World Microwave Imaging.	Prof. Won-Kwang Park Kookmin University	S. Korea
S1 – 23	7/5/2025	Dr. Mohamed Shahriari Sultan Qaboos University, Oman	Asymptotics for counting Pairs of Closed Geodesics in Metric Graphs	Dr. Al Jalila Al Abri Sultan Qaboos University	Oman
S1 – 24	14/5/2025	Dr. Arran Fernendez Sultan Qaboos University, Oman.	TBA	Prof. Luboš Pick Charles University	Czech Republic

Table B1.2: OMC-WRW Season 2 (Fall 2025 – Spring 2026) Wednesdays 20:00 Muscat Time (+4 GMT)

Serial #	Date	Moderator	Title	Speaker	Country
S2 – 1	24/92025	Prof. Sebti Kerbal Sultan Qaboos University - Oman	On the Port Hamiltonian Method	Prof. Nasser-Eddine Tatar King Fahd University of Petroleum and Minerals	KSA
S2 – 2	1/10/2025	Prof. Ibrahim Al Mojtaba Sultan Qaboos University - Oman	Collective behavior of Microrobotic Swarms with Long-Range Communications and decision-making	Prof. Igor Aronson Penn State University	USA
S2 – 3	8/10/2025	Prof. Anton Purnama Sultan Qaboos University - Oman	Improved Conjugate Gradient Methods with Self-Scaling for Large-Scale Unconstrained Optimization	Prof. Mehi Al Baali Sultan Qaboos University	Oman
S2 – 4	15/10/2025	Prof. Ahmed Al Guendi Cairo University	On Inverse q-Sturm-Liouville Problems	Prof. Zeinab Mansour Cairo University	Egypt
S2 – 5	22/10/2025	Prof. Mohammad Shahryari Sultan Qaboos University	Rank-Modulation Codes for DNA Storage in Shoygun Sequencing: Structure & Distance Properties	Prof. Alireza Abdollahi University of Isfahan	Iran
S2 –	29/10/2025	**Last Minute Cancelation**			
S2 – 6	5/11/2025	Prof. Mehi Al Baali Sultan Qaboos University	Numerical Methods for Phase-Field Modeling of Two-Phase Incompressible Flows	Dr. Abdullah Shah King Fahd University of Petroleum and Minerals	KSA
S2 – 7	12/11/2025	Omar Al Raisi SQU- Oman	On varieties of groups where conjugate separability implies transitivity	Prof. Mohammad Shahryari Sultan Qaboos University	Oman
S2 – 8	19/11/2025	Dr. Fatma Al Kharousi Sultan Qaboos University	Partial Symmetries and Hidden Patterns: Symmetric Inverse Monoids and Quasi-Crystals	Prof Abdullahi Ummar KU Abu Dhabi	UAE
S2 – 9	26/11/2025	Prof. Anton Purnama Sultan Qaboos University	On the Motion of Two Microspheres in a Stokes Flow Driven by an External Oscillator Field	Dr. Mohammad Al Hatimi Al Sharqeya University	Oman
S2 – 10	3/12/2025	Prof. Mohammad Shahryari Sultan Qaboos University	Splitting field of graphs, a generalization of integrality, recent results and future directions	Prof. Majid Arezomand	Iran
S2 – 11	10/12/2025	Prof. Mehi Al Baali Sultan Qaboos University - Oman	Crouzeix's Conjecture	Prof. Michael Overton New York University	USA
S2 –	17/12/2025	**Last Minute Cancelation**			
S2 – 12	24/12/2025	Prof. Mohammad Shahryari Sultan Qaboos University	Finite CSX Groups	Omar Al Raisi Sultan Qaboos University	Oman
S2 –	31/12/2025	**Winter Break**			
S2 –	7/1/2026	**Winter Break**			
S2 –	14/1/2026	**Winter Break**			
S2 –	21/1/2026	**Winter Break**			
S2 –	28/1/2026	**Winter Break**			
S2 –	4/2/2026				
S2 –	11/2/2026				
S2 –	18/2/2026	**Ramadan Timing**			
S2 –	25/2/2026	**Ramadan Timing**			
S2 –	4/3/2026	**Ramadan Timing**			
S2 –	11/3/2026	**Ramadan Timing**			
S2 –	18/3/2026	**Eid Break**			
S2 –	25/3/2026				
S2 – 13	1/4/2026	Prof Abdullahi Ummar KU Abu Dhabi	Iterative Approximation Methods for Solutions of Some Nonlinear Problems in a Real Hilbert Space	Prof. Bashir Ali Bayero University, Kano	Nigeria
S2 – 14	8/4/2026	Prof. Medhat Rakha Sultan Qaboos University	Uncertainty Principle Associated to (k,n)-Fourier transform	Prof. Selma Negzaoui University of Monastir	Tunisia
S2 – 15	15/4/2026	Prof. Sebti Kerbal Sultan Qaboos University - Oman	Stability Analysis of Finite Difference Schemes for Wave Equations with Delay	Dr. Manal Alotaibi King Fahd University of Petroleum and Minerals	KSA
S2 – 16	22/4/2026	Prof. Mohammad Shahryari Sultan Qaboos University	A Geometry of Points and Polygons	Prof. David Pierce Mimar Sinan University	Turkey
S2 – 17	29/4/2026	Prof. Mohammad Shahryari Sultan Qaboos University	Groups of Finite Morley Rank	Prof. Ayşa Berkman Mimar Sinan University	Turkey
S2 – 18	6/5/2026	Dr. Bushra Al Ghabshi	Direct and Inverse Problems for Mixed-Type Partial Differential Equations: Theory and Applications	Dr. Erkinjon Kerimov – Ghent University	Belgium
S2 – 19	13/5/2026	Dr. Fatma Al Muslhi	Nonsmooth Optimization and Machine Learning	Prof. Adil Bagirov – Federation University Australia	Australia
S2 - 20	25/3/2026	Dr. Mohamed Nasser Hanifa	Reliability Estimation in Stress–Strength Models under Censored Data	Prof. Reza Pakyari Qatar University	Qatar

Table B1.3: OMC-WRW Season 3 (Fall 2026 – Spring 2027) - Wednesdays 20:00 Muscat Mean Time (+4 GMT)

Serial #	Date	Moderator	Title	Speaker	Country
S3 – 1	2/9/2026	Dr. Mariam Al Maskari	**Beyond the Mesh: Advanced Radial Basis Function Collocation Techniques and Their Applications**	Prof. Siraj-ul-Islam - University of Engineering and Technology	Pakistan
S3 – 2	9/9/2026	Prof Anton Purnama	**TBA**	Prof. Mehi Al Baali – Prof. Emeritus - Sultan Qaboos University	Oman
S3 – 3	16/9/2026	Prof. Sebti Kerbal	**Exact A(alpha)-angles for fractional linear multistep methods and their use in higher-order numerical solutions**	Dr. Mohammed Nasir Hanifa - Sultan Qaboos University	Oman
S3 – 4	23/9/2026	Prof. Mehi Al Baali	**Strict Cardinality Control in Feature Selection for Support Vector Machines**	Prof. Laura Palagi - Sapienza Università di Roma	Italy
S3 – 5	30/9/2026	Prof. Anton Purnama	**The Mathematical Modeling of Double Diffusive Convection**	Dr. Khaled Al Mashrafi - Al Sharqeya University	Oman
S3 – 6	7/10/2026	Dr. Fatma Al Kharousi	**Domatic Polynomial of a Graph**	Prof. Saeid Alikhani - Yazd University	Iran
S3 – 7	14/10/2026	Prof Sebti Kerbal	**Solving Variable-Coefficients Fractional Differential Equations**	Dr. Fatma Almusalhi - Sultan Qaboos University	Oman
S3 – 8	21/10/2026	Prof. Yasser Dinar	**Subclasses of Analytic Function in Geometric Function Theory**	Dr Saima Mustafa - Rawalpindi Women University	Pakistan
S3 – 9	28/10/2026	Prof Ibrahim Al Mojtaba	**TBA**	Prof. Folashade Agusto, Kansas University	USA
S3 – 10	4/11/2026	Prof Reza Matin	**A New Composite Indicator in Non-Parametric Efficiency Analysis Techniques: An Application in Banking Industry**	Prof. Alireza Amirteimoori, Istinye university	Turkey
S3 – 11	11/11/2026	Prof. Mansur Rahman	**Optimal Heat Transport induced by Magnetic Nanoparticle Delivery in Vascularized Tumors**	Dr. Tahani Al Sariri - Sultan Qaboos University	Oman
S3 – 12	18/11/2026	Dr. Fatma Al Musalhi	**An Efficient Feedforward Neural Network–Based Algorithm for Solving Fractional Differential Equations**	Dr. Mohamed Rashid Admon – University of Technology	Malaysia
S3 –	25/11/2026	National Day Holiday	**National Day Holiday**	National day holiday	
S3 – 13	2/12/2026	Dr Omar Tout	**Recent Advances in Domination Theory in Graphs**	Dr. M. Kamal Kumar - University of Technology and Applied Sciences	Oman
S3 – 14	9/12/2026	Dr Abdul Wahab	**Quantum Computing: Architecture and Algorithms**	Prof. Mahmoud Annaby – Cairo University	Egypt
S3 – 15	16/12/2026	Prof Anton Purnama	**Nonlinear PDEs using PINNs**	Dr. Umar Sathic Ali - University of Technology and Applied Sciences	Oman
S3 – 16	30/12/2026	T Dr. Mariam Al Maskari	**TBA**	Dr. Siraj Ul Islam - Sultan Qaboos University	Oman
S3 – 17	6/1/2027	Dr Khaled Al Mushrafi	**Advection-Diffusion in Spring-Neap Oscillating Tidal Flows**	Pr. Anton Purnama - Sultan Qaboos University	Oman
S3 –	13/1/2027	Winter Break			
S3 –	20/1/2027	Winter Break			
S3 –	27/1/2027	Winter Break			
S3 –	3/2/2027	Winter Break			
S3 –	10/2/2027	**Ramadan Timing**			
S3 –	17/2/2027	**Ramadan Timing**			
S3 –	24/2/2027	**Ramadan Timing**			
S3 –	3/3/2027	**Ramadan Timing**			
S3 –	10/3/2027	**Eid Break**			
S3 – 18	17/3/2027	Prof Mansur Rahman	**Finite Element Approximation of Eigenvalues in Electromagnetism**	Prof. Daniele Boffi – King Abdullah University of Science & Technology	KSA
S3 – 19	24/3/2027	Prof. Moh'd Shahriari	**X-Nilpotent Groups**	Omar Al Raisi - Sultan Qaboos University	Oman
S3 – 20	31/3/2027	Prof. Yasser Dinar	**Flat Pseudo-Euclidean Leibniz superalgebras**	Prof. Sofiane Bouarroudj - New York University Abu Dhabi	UAE
S3 – 21	7/4/2027	Dr. Omar Al Raisi	**A Generalization of Residually Free Groups**	Prof. Moh'd Shahriari - Sultan Qaboos University	Oman
S3 – 22	14/4/2027	Dr. Omar Tout	**Fractals of Real Sequences**	Prof. Ola Hajj Sleiman - American University of Beirut	Lebanon
S3 – 23	21/4/2027	Dr Reza Matin	**The Dynamics of Risk Averse and Risk Seeking Investors in the Nigerian Stock Market**	Dr. Queensley C. Chukwudum - University of Uyo	Nigeria
S3 – 24	28/4/2027	Prof. Mohammed Al Lawati	**TBA**	Prof. Mesoud Boulbrachene - Sultan Qaboos University	Oman
S3 – 25	5/5/2027	Prof Samir Al Karaa	**TBA**	Dr. Mariam Al Maskari - Sultan Qaboos University	Oman
S3 – 26	12/5/2027	Prof. Mehi Al Baali	**Ratio Data and Technology Construction in Data Envelopment Analysis**	Prof. Reza Matin - Sultan Qaboos University	Oman
S3 – 27	19/5/2027	Prof. Mesoud Boulbrachene	**Numerical Methods for Advection Dominated Transport Equations**	Prof. Mohammed Al Lawati - Sultan Qaboos University	Oman

II. Oman Mathematics Day

This appendix presents the Oman Mathematics Day conferences organized annually by the Oman Mathematics Committee (OMC). Since the inaugural conference in 2015, Oman Mathematics Day has become the Committee's flagship international event, providing a national platform for educators, researchers, academics, policymakers, and practitioners to exchange knowledge, discuss emerging developments in mathematics education, and promote innovation in teaching, learning, and research.

Each conference has been organized under the overarching theme "Trends in Innovative Mathematics Curricula", while highlighting a specific contemporary topic that reflects national priorities and international developments in mathematics education.

- **First International Conference (20 November 2015):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Technology in Mathematics Teaching and Learning***
- **Second International Conference (20 – 22 November 2016):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Mathematics and Blended Learning***
- **Third International Conference (20 – 22 November 2017):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Early Mathematics Education***
- **Fourth International Conference (16 – 18 October 2018):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Assessment in Mathematics Teaching and Learning***
- **Fifth International Conference (19 – 21 November 2019):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Special Education in Mathematics***
- **Sixth International Conference (21 – 23 December 2020):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***The Impact of Teachers' Professional Development on the Quality of Education***
- **Seventh International Conference (20 – 22 December 2021):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Integrating 21st Century Skills (4C's) into Mathematics Curricula***
- **Eighth International Conference (20 - 22 December 2022):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***STEM Education for Sustainable Development***
- **Ninth International Conference (9 - 11 October 2023):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Modern Teaching and Learning Strategies***
- **Tenth International Conference (7 - 9 October 2024):** Trends in Innovative Mathematics Curricula**-** Highlights on: ***STEM-Based Technical and Vocational Education and Training for Sustainable Development***
- **Eleventh International Conference (7 - 8 October 2025):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Emerging Technologies and the Need to Reshape the Future of Mathematics Education***
- **Twelfth International Conference (7 - 8 October 2026):** Trends in Innovative Mathematics Curricula **-** Highlights on: ***Enablers of Quality Mathematics Education***

III. Oman mathematics committee International Winter Workshop (OMC – IWW)
Season 1. The Winter School of Lie Theory

اللجنة العمانية للرياضيات
Oman Mathematics committee

جامعة السلطان قابوس
Sultan Qaboos University

Oman Mathematics Committee

International Winter Workshop (OMC - IWW)

Advances in Lie Theory and Related Areas

4 - 8 January 2026

Sultan Qaboos University | Oman

This workshop brings together leading researchers from around the world, including distinguished experts in the field, to share their most recent findings and perspectives. It offers a rich environment for exchanging ideas, strengthening collaboration, and exploring emerging directions at the intersection of Lie theory and its diverse applications. By providing an interactive platform for presentation and discussion, the workshop enables participants to learn from one another, engage in meaningful dialogue, and inspire future advancements in the field.

Invited Speakers

Bai, Chengming, Nankai University, China.
Bouarroudj, Sofiane, NYU Abu Dhabi, UAE.
Demni Nizar, NYU Abu Dhabi, UAE.
Dinar, Yasser, Sultan Qaboos University, Oman.
Ehret, Quentin, NYU Abu Dhabi, UAE.
Eshmatov, Farkhod, New Uzbekistan University, Uzbekistan.
Futorny, Vyacheslav, SICM SUSTech Shenzhen, China.
Gilliers, Nicolas, Paris Cité University, France,
Lai, Chun-Ju, Academia Sinica, Taiwan.
Liu, Jiefeng, Northeast Normal University, China,
Makhlouf, Abdenacer, Haute-Alsace University, France.
Nilsson, Jonathan, Linköping University, Sweden.
Savage, Alistair, University of Ottawa, Canada.
Tan, Shaobin, Xiamen University, China.
Vlaar, Bart, Beijing Institute of Mathematical Sciences and Applications, China
Wang, Qing, Xiamen University, China.
Wang, Lizhong, School of Mathematical Sciences, Peking University, China

Scientific Committee

Chengming Bai, Nankai University, China
Sofiane Bouarroudj, NYU Abu Dhabi, UAE
Vyacheslav Futorny, SICM SUSTech, China
Jiping Zhang, Peking University, China

Organizing Committee

Sofiane Bouarroudj, NYU Abu Dhabi, UAE
Yassir Dinar, SQU, Oman
Quentin Ehret, NYU Abu Dhabi, UAE
Vyacheslav Futorny, SICM SUSTech
Fatma Al Kharousi, OMC, Oman)
Magda Al-Hinai, OMC, Oman

The Winter School of Lie Theory | Program

Date	Day	Start	End	Session Type	Speaker	Institution	Talk Title
2026-01-04	Sun	9:30	9:45	Welcome Note	Fatma Al-Kharousi	Oman Mathematics Committee, Sultan Qaboos University	Superelliptic Lie algebras and orthogonal polynomials
		9:45	10:30	Talk	Vyacheslav Futorny	Shenzhen International Center for Mathematics (SUSTech)	Superelliptic Lie algebras and orthogonal polynomials
		10:30	**11:00**	**Break**			**Coffee**
		11:00	11:45	Talk	Alistair Savage	University of Ottawa	Diagrammatics for quantum symmetric pairs
		11:45	12:30	Talk	Sofiane Bouarroudj	New York University Abu Dhabi	Flat quasi-Frobenius Lie superalgebras
		12:30	14:15	Break			Lunch
		14:15	15:00	Talk	Chun-Ju Lai	Academia Sinica	Quantum Wreath Products
		15:00	15:45	Talk	Yassir Dinar	Sultan Qaboos University	Dubrovin-Frobenius manifolds from classical W-algebras
		15:45	**16:15**	**Break**			**Coffee**
2026-01-05	Mon	09:30	10:15	Talk	Shaobin Tan	Xiamen University	Representations for elliptic Lie algebras and vertex algebras
		10:15	**10:45**	**Break**			**Coffee**
		11:00	12:00	Meeting	HH SQU Vice Chancellor	Sultan Qaboos University	Welcome
		12:15	**14:00**	**Lunch**			**Lunch**
		14:00	14:45	Talk	Nizar Demni	New York University Abu Dhabi	From Dunkl operators to simple Hurwitz numbers
		14:45	15:30	Talk	Nicolas Gilliers	Université Paris Cité (MAP5)	TBA
		15:30	**16:00**	**Break**			**Coffee**
		16:00	16:45	Talk	Jiefeng Liu	Northeast Normal University	Cohomology of Lie conformal algebroids
2026-01-07	Wed	09:30	10:15	Talk	Chengming Bai	Nankai University	Generalized splitting of algebras with application to a bialgebra structure of Leibniz algebras induced from averaging Lie bialgebras
		10:15	**10:45**	**Break**			**Coffee**
		10:45	11:30	Talk	Abdenacer Makhlouf	Université de Haute-Alsace (IRIMAS)	Deformation maps of Quasi-twilled associative algebras
		11:30	12:15	Talk	Hongian Zhang	Shanghai University	TBA
		12:15	14:00	Lunch			Lunch
		14:00	14:45	Talk	Lizhong Wang	Peking University	TBA
		14:45	15:30	Talk	X. Garcia Martinez	Universidade de Santiago de Compostela	Simple weight modules over Witt superalgebras
		15:30	**16:00**	**Break**			**Coffee**
		16:00	16:45	Talk	Quentin Ehret	New York University Abu Dhabi	The superization of Hochschild's Lemma and restricted Lie-Rinehart superalgebras
2026-01-08	Thu	09:30	10:15	Talk	Qing Wang	Xiamen University	Affine vertex operator superalgebras at admissible level
		10:15	**10:45**	**Break**			**Coffee**
		10:45	11:30	Talk	Qing Xiang	Southern University of Science and Technology (SUSTech)	TBA
		11:30	12:15	Talk	Chia Zargeh	Modern College of Business & Science (MCBS)	HNN-extension: from group theory to non-associative algebraic structures
		12:15	**14:00**	**Lunch**			**Lunch**

IV. Oman Mathematics Committee Research Project Forums

The 1st Research Project Forum (March 2024)

Date & Venue

Launched on March 5, 2024, in Muscat Governorate.

Organizers

Jointly organized by the Oman Mathematics Committee (OMC) and the Innovation and Excellence in STEAM Education Research Group at the College of Education, Sultan Qaboos University.

Core Objective

Bridging the gap between theoretical educational research and practical classroom implementation to fulfill the strategic pillars of Oman Vision 2040.

Theme

Research Projects Supporting STEAM Education for Sustainable Developm

Key Focus Areas:

- Showcasing distinguished research initiatives in mathematical sciences and mathematics education.
- Creating a unified platform for researchers, academics, and school educators to collaborate.
- Marketing innovative educational projects to local stakeholders and potential investors to attract institutional partnerships.

The 2nd Research Project Forum (December 2025)

Date & Venue

Held on December 24, 2025, at the Conference Hall, Sultan Qaboos University.

Organizers

Jointly organized by the Oman Mathematics Committee (OMC) and the Innovation and Excellence in STEAM Education Research Group at the College of Education.

Theme

"Transformations of STEAM Education in the Digital Revolution Era: Cross-Disciplinary Innovation and Empowerment for a Sustainable Future."

Core Objective

To bring together academics, researchers, educators, and specialists to exchange research, innovative practices, and interdisciplinary experiences in STEAM education, while exploring how digital transformation can enhance teaching, learning, research, and sustainable development through cross-disciplinary collaboration.

Key Focus Areas:

- Adapting to digital transformations and AI integration to bolster future student competencies.
- Fostering cross-disciplinary education by organically blending Science, Technology, Engineering, Arts, and Mathematics.
- Supplying a collaborative launchpad to turn quantitative and qualitative research into operational educational tools.

V. Monthly Professional Development Webinars for Mathematics and Science Teachers

This appendix presents the Monthly Professional Development Webinars for Mathematics and Science Teachers organized by the Oman Mathematics Committee (OMC). Launched in December 2025, this monthly online webinar series was established to promote continuous professional development through action research, collaborative learning, and the exchange of educational experiences and best practices. The initiative supports Oman Vision 2040 by fostering innovation in mathematics and science education, strengthening research-informed teaching practices, and providing educators with a platform to discuss practical solutions to classroom challenges.

First Professional Development Webinar (30 December 2025)
Theme: *Professional Development through Action Research*
Highlights on:

- Conceptual and methodological foundations of action research.
- Action research in mathematics education: applications and practical models.
- Data collection, measurement, and analysis in action research.
- School-based action research to enhance cooperative learning in mathematics.

Second Professional Development Webinar (27 January 2026)
Theme: *Professional Development through Action Research*
Highlights on:

- Aligning action research with TIMSS requirements in mathematics education.
- Using action research to improve performance in international large-scale assessments.
- Professional learning communities and innovative teaching practices.
- Digital technologies and artificial intelligence to enhance mathematics learning.

Third Professional Development Webinar (31 March 2026)
Theme: *Professional Development through Action Research*
Highlights on:

- Integrating artificial intelligence into the design and implementation of action research.
- AI-supported approaches for improving educational practices.
- Artificial intelligence as a catalyst for enhancing teaching and learning.
- Constructivist learning models and their impact on students' mathematics achievement.

Fourth Professional Development Webinar (28 April 2026)
Theme: *Professional Development through Action Research*
Highlights on:

- Future directions of action research in mathematics education.
- Emerging trends and classroom applications of action research.
- Innovative practices for improving mathematics teaching and learning.

Fifth Professional Development Webinar (17 November 2026)
Theme: *Empowering Early Cycle Teachers through AI Tools*
Highlights on:

- AI Tools for Mathematics teaching in early primary grades.
- Designing educational resources with AI.
- Innovative practices for young learners.

VI. Mathematics Research Forum

1. OMC 1st International Workshop in Mathematics Research (1st IWMR) on *Numerical Optimization*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 3 January 2017.

2. OMC 2nd International Workshop in Mathematics Research (2nd IWMR) on *Optimization Software*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 8–9 January 2017.

3. OMC 3rd International Workshop in Mathematics Research (3rd IWMR) on *Difference Equations*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 5 April 2017.

4. OMC 4th International Workshop in Mathematics Research (4th IWMR) on *Algebra, Geometry and More*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 13 December 2017.

5. OMC 5th International Workshop in Mathematics Research (5th IWMR) on *Complex Analysis*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 19 November 2017.

6. OMC 6th International Workshop in Mathematics Research (6th IWMR) on *Algebra, Geometry and Applications*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 2018.

7. OMC 7th International Workshop in Mathematics Research (7th IWMR) on *Algebra, Geometry and Applications*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 17-18 December 2019.

8. OMC 8th International Workshop in Mathematics Research (8th IWMR) on *Optimization and Numerical Analysis*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 7 January 2020.

9. OMC 9th International Workshop in Mathematics Research (9th IWMR) on *Algebra, Geometry and Applications*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 2021.

10. OMC 10th International Workshop in Mathematics Research (10th IWMR) on *Mathematical Modeling and Numerical Optimization*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 12 May 2022.

11. OMC 11th International Workshop in Mathematics Research (11th IWMR) on *Algebra, Geometry and Applications*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 11 May 2023.

12. OMC 12th International Workshop in Mathematics Research (12th IWMR) on *Algebra, Geometry and Applications*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 11 May 2024.

13. OMC 13th International Workshop in Mathematics Research (13th IWMR) on *Algebra, Geometry and Applications*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 12 May 2025.

14. OMC 14th International Workshop in Mathematics Research (14th IWMR) on *Numerical Analysis and Optimization*, OMC, Sultan Qaboos University, Muscat, Sultanate of Oman, 6 January 2026.

VII. Mathematics Education Forum

The Mathematics Education Forum, established by the Oman Mathematics Committee (OMC) in 2019, is an annual initiative that brings together mathematics educators, researchers, and academics to exchange expertise, promote innovative teaching practices, and support the continuous development of mathematics education in line with Oman Vision 2040.

First Mathematics Education Forum (9 May 2019)

Theme: *The Philosophy of Cambridge Mathematics Curricula*

Highlights on:

- Principles and philosophy of the Cambridge Mathematics Curriculum.
- Student-centered approaches for developing mathematical thinking and problem-solving skills.
- Designing mathematics questions and quizzes aligned with the Cambridge Mathematics Curriculum

Second Mathematics Education Forum (9 May 2020)

Theme: *Celebrating the International Day of Women in Mathematics*

Highlights on:

- Virtual panel discussion held in celebration of the International Day of Women in Mathematics.
- Promoting the contributions of women in mathematics and mathematics education.

Third Mathematics Education Forum (14 – 25 November 2021)

Theme: *Essential Skills for Blended Learning*

Highlights on:

- Designing and developing educational and training materials.
- Applying design thinking in e-learning instructional design.
- Digital assessment and evaluation tools for e-learning.

Fourth Mathematics Education Forum (28 April 2022)

International online workshops delivered in collaboration with the Department of Mathematics, Sultan Qaboos University.

Theme: *Inquiry-Based Learning in University Mathematics*

Highlights on:

- Promoting inquiry-based approaches in undergraduate mathematics teaching.
- Enhancing students' mathematical reasoning, exploration, and problem-solving skills.
- Sharing effective instructional practices and experiences in university mathematics education.
- Encouraging active learning and student engagement through inquiry-based pedagogy.

Fifth Mathematics Education Forum (February–March 2023)

International online workshops delivered in collaboration with the Directorate General of Educational Supervision, Ministry of Education.

Theme: *Empowering Student Achievement in School Mathematics*

Highlights on:

- Balancing conceptual and procedural understanding.
- Developing higher-order thinking skills.
- Effective programs and classroom practices for improving mathematics achievement.
- Sharing evidence-based strategies for improving students' achievement in school mathematics.

Sixth Mathematics Education Forum (27 November 2024)

Theme: *Towards Enjoyable Digital Learning*

Organized in collaboration with: Khadijah bint Khuwaylid School, Dhofar Governorate.

Highlights on:

- Digital technologies for engaging mathematics learning.
- Innovative classroom practices for technology-enhanced mathematics education.

Seventh Mathematics Education Forum (14 April 2025)

Theme: *Fibonacci: The Secret Language of the Universe*

Organized in collaboration with: Umm Habibah Basic Education School, Al Musannah, South Al Batinah Governorate.

Highlights on:

- Applications of the Fibonacci sequence in mathematics, art, music, architecture, finance, biology, and graphic design.
- Exhibition demonstrating interdisciplinary connections between mathematics and creativity.
- Presentation highlighting the national initiatives of the Oman Mathematics Committee in supporting mathematics education and educational research.

Eighth Mathematics Education Forum (23 December 2026)

Theme: *Empowering Early Childhood Mathematics Teachers to Use Artificial Intelligence Tools for Creative Mathematics Teaching*

Highlights on:

- Artificial intelligence tools for early childhood mathematics education.
- Creative approaches to mathematics teaching.
- AI-supported lesson design and interactive learning experiences.
- Best practices for integrating artificial intelligence into early mathematics education.

End of Report