



Annual REPORT 2024

Grow World-Class Technocrats for the Real World



Vision

To Grow World-Class Technocrats for the Real World

Mission

To grow world class technocrats through high quality experiential teaching, research and ardent application of science, technology and innovation

Guiding Principles

- **A Sense of Community**
- **Commitment to Excellence**
- **Providing Service to Students**
- **Upholding Freedom of Thought, Enquiry and Expression**
- **Anticipation and Response**
- **Critical Assessment of our Performance**
- **Integrity**
- **Equity, Access and Participation**

Priority Objectives 2020 - 2024

1. Strengthen and Embed Institutional Governance

- 1.1. Consolidate, harmonize and realign the PNG University of Technology Act and Higher Education Act with other subsidiary Acts and Regulations.
- 1.2. Streamline Council and Committees for effective leadership and performance
- 1.3. Develop and adopt a structured and coherent framework for the development, attraction, retention and succession of Council members, Council secretariat and senior management.
- 1.4. Develop a performance management system based on balanced scorecard to operationalize, manage, monitor as well as track progress and accomplishments of the Strategic Plan.

2. Academic Excellence

- 2.1. Prepare scope of works and outsource to competent professionals to undertake comprehensive Higher Education Industry diagnostics and analysis. This should incorporate a supply/demand matrix to ascertain the gaps between what the PNG University of Technology is currently offering and the need and expectations of our 'real world' stakeholders.
- 2.2. Inculcate and model PNGUoT graduate attributes among all students.
- 2.3. All professional courses will be benchmarked or accredited to international or industry standards by 2024.
- 2.4. All subjects will have digitally available subject files.
- 2.5. All faculty will attain PG Certificate in student-centered teaching.
3. Research, Innovation and Training
 - 3.1. Strategize to conduct research that meets industry and community demand.
 - 3.2. Strengthen research on environmental conservation and climate change.
 - 3.3. Research Centers will expand and strengthen links with stakeholders for appropriate developments.
 - 3.4. Postgraduate training will flourish by producing qualified professionals with Masters and PhD degrees while building a strong research culture within the University.
4. Organisational Effectiveness and Performance
 - 4.1. Develop a strategic institutional leadership and talent framework to attract, retain and develop highly professional and competent administrative and academic staff.
 - 4.2. Improve and expand human resource management, systems and processes.
 - 4.3. Realign workforce planning, reward achievers in recognition of excellence with our real-world learning.
 - 4.4. Develop continuing professional development (CPD) framework for our academic technocrats, incorporating a wide range of collaborative and individual activities, including working with educational designers, attending workshops having discussions with peers, presenting at conferences, being mentored and undertaking professional reading.





4.5. Consolidate and enhance existing security and safety programs by tailoring the program to each unique situation and campus setting such as:

- 4.5.1. Overall Campus Security.
- 4.5.2. Emergency Management.
- 4.5.3. Occupational Health and Safety Services.
- 4.5.4. Video Surveillance.
- 4.5.5. Perimeter Fence, Security & Street Lights.
- 4.5.6. Legal Matters.

4.6. Empower the University community through information technology that enables:

- 4.6.1. Effortless access to data, information and knowledge.
- 4.6.2. Effective and efficient use and deployment of information technology to automate administrative functions and systems.
- 4.6.3. Rapid and profound innovation in teaching, learning and research.
- 4.6.4. Seamless collaboration across communities and disciplines.

4.7. Expand network capacity to deliver online courses remotely.

5. Access, Externalization and Infrastructure/Utilities

5.1. Inspect all institutional properties and assets (staff accommodation, office, lecture halls, academic buildings, etc.) incorporating a comprehensive report of each asset (age of property, engineering and architectural soundness of structure, state or condition of property). Develop a comprehensive asset register and inventory of the assets including white goods (furniture and fittings). This asset register will become the repository for the asset data, which will provide the structure within which asset history is recorded and will include maintenance, modifications, upgrades, breakdowns, spares replacement as well as performance or productivity information.

5.2. Fully integrate asset register into the asset management and financial systems. This ensures that asset transactions are updated on a real-time basis and that data integrity is maintained between the asset register and the other systems.

5.3. Review cost-effectiveness, economies of scale and utilization of public utilities such as water, power (including stand-by generators and solar-powered lights, sewage system and garbage collection and disposal).

5.4. Develop "Business Case" for UNITECH Master Plan as a City within a City and in addition as one of the strategic objectives to supplement the medium to long term goal of financial self-sufficiency (See Strategic Domain 6).

5.5. Deliver Courses online to increase intake of students.

6. Financial Self Sufficiency

6.1. Consolidate internal controls, policies and procedures that protect the assets of the PNG University of Technology.

6.2. Create reliable financial reporting, promote compliance with laws and regulations and facilitate effective and efficient operations. It is important to form internal controls for:

- 6.2.1. Handling funds (received and expended).
- 6.2.2. Preparing appropriate and timely financial reporting.
- 6.2.3. Conducting and completing timely annual audits of financial statements and core processes.
- 6.2.4. Evaluating Bursary staff and programs.
- 6.2.5. Maintaining inventory records of real and personal property.
- 6.2.6. Implementing personnel and conflict of interest policies.
- 6.3. Leverage and grow effective business
 - 6.3.1. Review and streamline the UNITECH Habitat to ensure it effectively performs its functions as a conservation and nature park, preservation and research into local animals and plant species and a Business Hub to sustain and maintain its operations.
 - 6.3.2. Ensure effective marketing and implementation of the Business Plan of the PNG University of Technology's Master Plan – City within a City.
- 7. Industry Partnerships and Internationalization.
 - 7.1. Interface with Stakeholders
 - 7.1.1. Develop sustainable networks, partnerships, communication media, and activities between the PNG University of Technology and communities at local, national, regional and international levels. (Engagement activities between communities and higher education may be formal or informal. Example engagement initiatives include establishing relationships, collaboration initiatives, business ventures, co-sponsored meetings, conferences, sports events, research projects and many others.
 - 7.1.2. Collaborate with James Cook University to develop a sound business case to assist indigenous landowners of Wafi/Golpu in business training, development and incubation as well as social, economic and environmental transition.
 - 7.1.3. Expand and consolidate the PNG University of Technology alumni network.
 - 7.2. Brand Marketing and Differentiation
 - 7.2.1. Review the iconographic expressions of PNG University of Technology's identity and develop a unique brand to create a unique differentiation vis-à-vis other Universities providing similar programs and experiences in university education.
 - 7.2.2. Public Relations Office will be active in promoting PNGUoT through all media.
 - 7.3. Partnership with Overseas Universities
 - 7.3.1. Conclude stage three of PNG University of Technology and James Cook University Twinning arrangement and ensure effective implementation and deployment.
 - 7.3.2. International relations with multi and bilateral partners will be strengthened. Collaborate with Board of UNITECH Development Corporation and its subsidiary, National Analytical and Technical Laboratory (NATLS) to streamline and make them become "viable going concerns".





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Vice Chancellor's Overview

The year 2024 was another milestone in the growth and transformation of the Papua New Guinea University of Technology (PNGUoT). Among the highlights was the full accreditation of all five engineering programs offered by the Faculty of Engineering. In September, Engineers Australia conducted a rigorous review of our programs, including staffing levels, teaching facilities, experimental resources, and curriculum delivery. Students and staff were interviewed, and teaching methods were carefully assessed. On 18 December 2024, the results were released—granting PNGUoT Engineering courses full accreditation. This historic achievement has significantly enhanced the University's profile, both nationally and regionally, and reaffirmed our reputation for excellence in engineering education.

Alongside this success, PNGUoT made significant strides in strengthening its research capacity and knowledge dissemination. The University launched its inaugural Interdisciplinary Journal of PNGUoT (IJPNGUoT), creating a platform to showcase research generated within our institution. While many of our academic staff continued to publish in leading indexed journals worldwide, we are proud that senior professors chose also to contribute to IJPNGUoT, providing mentorship to younger academics through co-publication opportunities. The journal is already proving to be an invaluable training ground for the next generation of researchers.

Our overall research output also grew considerably. Indexed journal publications increased from approximately 90 in 2023 to 120 in 2024, a remarkable growth that has boosted the University's global standing and confirmed PNGUoT as the leading university in Papua New Guinea. Our academics remain at the forefront of international research, with several being widely recognized experts in their respective fields.

In 2024, PNGUoT also took an active role in regional scientific collaboration through its involvement in establishing the Pacific Science Academy (PAC). I was honoured to serve on the Establishment Committee, and we are proud that one of our own, Professor Maino, was appointed a Foundation Fellow of the Academy. These engagements further strengthen PNGUoT's role as an emerging science and technology hub in the Pacific. Complementing these efforts, PNGUoT successfully hosted the Research, Science and Technology Conference, where staff and students showcased their research and innovations to a broad audience.

On the academic access front, the University continued to expand opportunities for students through online learning. Enrolments in online programs grew from 200 in 2023 to around 500 in 2024, reflecting the increasing demand for flexible learning options. Given the constraints on campus enrolments caused by limited accommodation, this expansion represents a vital growth avenue. We are also grateful for the Australian Government's support in funding the construction of a new 100-bed female dormitory, which will further ease accommodation pressures and promote greater access for women students.

Financially, PNGUoT is proud to have achieved its fifth consecutive year of unqualified audit results. This reflects our commitment to sound governance and transparent financial management. While our administrative processes remain operationally effective, we recognize the need for greater efficiency and are working towards improving systems through automation.

In December 2024, we successfully concluded the 2020–2024 Strategic Plan. An independent performance review indicated that we had achieved approximately 70% of the strategic objectives, a result that reflects the dedication of our executive management and staff. Importantly, the lessons learned from this period have informed the development of a more focused and realistic Strategic Plan for 2025–2029. With a clear vision to position PNGUoT as the leading science and technology innovation hub in the Pacific region, this new strategy was launched in January 2025 and sets the path for our next phase of growth and impact.

In closing, 2024 has been a year of remarkable progress and achievement for PNGUoT. From academic accreditation to research excellence, from financial integrity to strategic renewal, the University has continued to strengthen its foundation and extend its influence regionally and globally. I extend my deepest gratitude to our staff, students, partners, and supporters for their contributions to these successes. Together, we are shaping PNGUoT into a world-class institution that delivers graduates and research outcomes to meet the real-world needs of our nation and the region.

Professor Ora Renagi OL
Vice Chancellor

Organizational Structure



Members of the University Council

1. Mr Sam Koim, LLB, OBE Chancellor
2. Ms Finkewe Zurecnouv ML, Pro Chancellor
3. Mr Paul Paul Komboi, OBE Member
4. David Masani - Member
5. Ms Florence Willie - Member
6. Mr John Byrne - Member
7. Professor Ora Renagi - Vice Chancellor and Member
8. Professor Tom Okpul - Member
9. Mr Franz Hemetsberger - Member
10. Mr Sabastian Singery - Member
11. Mr Brenth Karol - SRS President - Member

In attendance

Mrs Veronica Thomas (Registrar)
Mr Diraviam Tharmaraj (Bursar)
Ms. Emmy Kama (Acting Executive Officer)

PNG University of Technology Organizational Structure

The PNGUoT Organizational Structure is derived from the PNG University of Technology Act, 1986, the University Statutes (by-laws) and the University Staff Establishment. The University Council membership is established under Section 9 of the University Act. The Council is made up of 28 members from various representations including members of Parliaments, the Higher Education Minister and Department, the universities and the civil society.

The Senior Executive Management, are identified as the Officers of the University under Section 25 of the University Act and the University Statutes No. 1/1995.

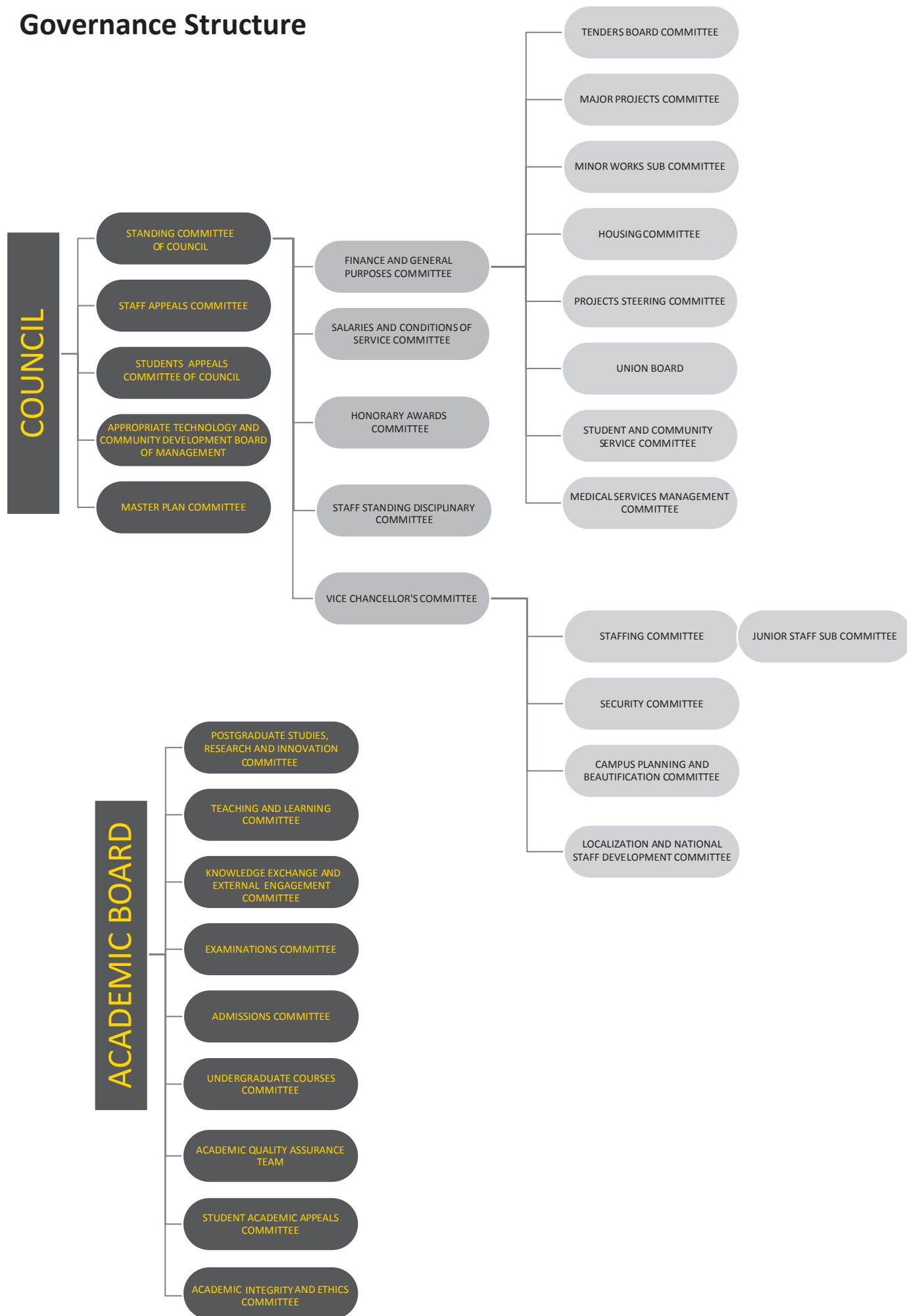
The Officers of the University are the;

1. Chancellor
2. Pro Chancellor
3. Vice Chancellor
4. Deputy Vice Chancellor
5. Pro Vice Chancellor-Academic
6. Pro Vice Chancellor-Planning and Development
7. Pro Vice Chancellor-Administration
8. Registrar
9. Bursar
10. University Librarian

Under the Officers of the University, there are 13 Academic Schools and about 20 non-Academic departments and sections and units that support the officers of the University in implementing the University's purpose of establishment, including the University's visions and missions. The academic and non-academic schools, sections and units are derived from the University's Staff Establishment (established positions) as approved by the National Department of Personnel Management.

Attached is the illustration of the Organizational Structure.

Governance Structure





FACULTY OF BUILT ENVIRONMENT



SCHOOL OF ARCHITECTURE AND CONSTRUCTION MANAGEMENT

The Program Benchmarking and Accreditation Process:

Architecture:

Benchmarking for the Architecture Program is made to all Association of Architecture Schools of Australasia (AASA) and Accreditation by the Architecture Accreditation Council of Australia (ACA). The School is in communication with ACA in Sydney and will be seeking a formal invitation for an ACA representative to visit the school at the Heads of School and Deans of Faculty AGM Meeting at the University of Queensland's Atrium in Brisbane in October 2024.

Construction Management:

The benchmarking for the Construction Management Program is with the AIB, and ongoing communication and discussions have been progressive to date.

Both new programs and curricula were designed (2016 – 2019) and implemented in 2020 with the above tasks (benchmarking and accreditation) in mind. Nonetheless, specific focus and emphasis are on the hot, humid tropics and the socio-cultural variables of the Melanesian societies.

Accreditation Plan 2024 - 2026

As mentioned in the previous report, the second Benchmarking was documented and implemented in 2009 for both the Architecture and Building Programs.

1) The Architecture Program was and is currently with the Architecture Schools of Australasia Group, which is under the umbrella of the Association of Architecture Schools of Australasia (AASA). This grouping has 23 Australian Architectural Schools, 3 New Zealand Schools, the Architecture School in Hong Kong, the Architecture School in Singapore, and affiliate schools in Malaysia.

2) Earlier in the 1990s, the PNG Architecture Program was benchmarked with the Commonwealth Association of Architects in London, as with other Commonwealth Nations. This was relented because of the costs involved and distance.

3) The accreditation of the Course in Architecture will be the same for all Schools that are members of AASA. The Accreditation Body is the Architecture Accreditation Council of Australia (ACA). The accreditation in the Architecture Program is only for the +2-year Master's Program. This will be pursued in the 2025 -2026 period when the master's program is in session.

4) From 1989 to 2009, the Building Program was benchmarked with the Building Schools accredited by the Australian Institute of Building (AIB). This was also relented due to staffing levels and cost constraints encountered at that time.

5) The new Construction Management Program will still maintain Benchmarking and pursue Accreditation with the Australian Institute of Building (AIB).

6) The timeline is scheduled in line with the Master of Construction Management program, which begins in 2024. The accreditation is for both undergraduate and postgraduate programs in construction management courses.

Both the Architecture and Construction Management Programs will undergo the Accreditation Process Requirements from 2025 – 2026. This will be done in collaboration with the Industry Board of Architects of Papua New Guinea (BOAPNG), the Papua New Guinea Institute of Architects (PNGIA), and the Papua New Guinea Institute of Builders (PNGIOB).



The Accreditation of the Architecture Program

For community engagements, SPISARD is the conduit through which the department channels its outreach activities. Community-based livelihood enhancing activities were conducted in provinces such as Oro, Central, Eastern Highlands, East Sepik, Jiwaka, Western Highlands and Southern Highlands. A detailed annual report from SPISARD is normally submitted to the office of the Deputy Vice Chancellor through the Head of Agriculture.

In 2023, the Department continued to implement the instruments of a five-year MOU signed in 2022 between PNGUoT and Trukai Rice Industries. Through this agreement, several established or prospecting rice farmers throughout PNG had two trainings at the University's Taraka Campus. This partnership continues to facilitate the transfer of knowledge, skills and technology to participating individuals, groups or organizations.

Notable Highlights

- There has been increased commercial activity at the Agriculture Farm. The Farm entered into a contract with the University students' mess to supply livestock meat and crop produce. The Farm started supplying the mess with 1000 dressed broilers per week in June 2023.
- In preparation for program benchmarking, the Department renovated its laboratories, lecture rooms, postgraduate study room, staff offices and the reception area.
- Two academic staff successfully completed their PhD studies from Queensland University of Technology (QUT) and PNG University of Technology (PNGUoT).

Figures from top down:

Renovated laboratories, Renovated postgraduate study room, Chicken dressing process and Dressed chicken ready for delivery to the students' mess.



School of Surveying and Land Studies

INTRODUCTION

The School of Surveying and Land Studies (SSLS) comprises three strategically aligned disciplines—Surveying, Geographic Information Science, and Property Studies—alongside its dedicated focus on the Melanesian Land Studies Centre. This Annual Report provides a structured account of the department's key academic, research, and operational achievements across all sections during the 2024 academic year, reflecting its contribution to institutional goals and national development priorities.

The School of Surveying and Land Studies remains a pioneer, a productive academic unit since the inception of the Papua New Guinea University of Technology. It has evolved from strength to strength over the years in academic rigour and research focus, while also embracing change in technology and industry standards.

For the 2020- 2024 University's corporate strategic statements, the School adopted the following strategic statements.

Vision

To produce land professionals and geomaticians who are globally competitive.

Mission

To produce globally recognised land professionals through high quality innovative technological knowledge-based teaching and research.

Objectives

- (i) Recruit full-time academic teaching staff having a minimum qualification of a Master's Degree consistent with PNGUoT policies.
- (ii) Improve the quality of teaching and research with improved (upskilled) manpower through training and attainment of post graduate studies
- (iii) Emphasise trainer-specific skills in adapting to emerging technology used for modern-day teaching and research
- (iv) Promote mentoring of graduate students and staff
- (v) Benchmark academic programs against industrial and international academic standards.

Staffing

The School has a staff strength of 31 members comprising the following:

Status	Detail	No
Academic	Surveying	5
	GIS	8
	Property Studies	7
Technical Staff	Surveying	5
	GIS	1
Administration	Laboratory Manager	1
	Senior Secretary	1
	Secretary	1
	Janitors	2
	Total	31

Four academic staff are on study leave pursuing their postgraduate studies; two at PNGUoT and two in Australia. In addition, two technical officers from the Surveying Section are also pursuing postgraduate studies at PNGUoT.

Students

The School had 111 registered students in the first semester and 115 in the second semester in the suite of undergraduate degree programs offered in the three sections. Further details are furnished in the respective Sectional reports.

Infrastructure

The School is housed in the iconic and antiquated Sandover Building, occupying the Ground Floor and 2nd floor. It has main tained 6 classrooms and 6 office spaces on the top floor, office spaces, a conference room, 3 computer laboratories and restrooms on the Ground Floor. Leakage in the roof of the building has caused wet rot and decay in timber structures on the top floor. Classrooms on the top floor, therefore, would need overall repairs and maintenance, especially with the ceilings.

The classroom on the top floor, two computer labs, and the conference room on the ground floor are equipped with overhead projectors.

Moreover, much of the activities of the School are inherently pursued in the three sections. The following sections contain the reports from the respective sections in the School.

1. SURVEYING SECTION

The Surveying Section recognizes the significance of embracing emerging surveying and mapping technologies, including GNSS, Automated Surveying and Mapping Systems, and photogrammetry, remote sensing, and drones. A critical objective of the Survey Section is to enhance the existing capabilities of the section's professional expertise through postgraduate studies and applied research in the emerging state of art technologies.

As an integral part of the school, the Surveying section continues to play a vital role in shaping future professionals in the fields of surveying and geomatics, ensuring they are equipped with the technical expertise and practical experience necessary to excel in the industry.

From enhancements in curriculum design to infrastructure improvements and research advancements, the Survey Section has demonstrated resilience and adaptability in an ever-evolving technological landscape. Faculty and students have actively contributed to the progression of surveying methodologies through research, partnerships, and professional engagements. Despite some challenges in resource availability and operational limitations, strategic solutions have been implemented to address these concerns and drive continuous improvement.

With a commitment to academic excellence and technological innovation, the PNGUoT Survey Section continues to produce highly skilled professionals who contribute to national development and global advancements in surveying and spatial sciences.

Mission Statement

To produce world-class competitive graduates with in-depth knowledge and an adequate level of motor skills in all aspects of surveying techniques relevant to the profession and the allied field of Geomatics.

Enhancing Practical Learning: 2024 Student Training and Field Trip - Bridging Theory and Practice

The Survey Section under the School of Surveying and Land Studies is actively preparing for its 2024 Student Training and Field Trip. The field trip is designed to provide students with hands-on experience in surveying, geospatial analysis, and land management. This initiative aims to bridge academic learning with practical application, ensuring students gain real-world exposure to industry practices.

Key Activities & Learning Opportunities

- **Field Data Collection** – Students engage in on-site surveying, utilizing GPS, LiDAR, and total stations for accurate mapping.
- **Cadastral Surveying** – Practical exercises in land boundary assessments, legal land descriptions, and property mapping.
- **Geospatial Technology Applications** – Training in GIS and remote sensing, enhancing spatial data analysis skills.
- **Industry Collaboration** – Interaction with surveying professionals, providing insights into career pathways and industry trends.

Survey Equipment

The SSLS is well equipped with two GNSS/GPS continuously operating reference stations (CORS). The LAE1 CORS has been a core station for the International Terrestrial Reference Frame (ITRF) since 2000. In 2022, a second CORS LAE2 was established at SSLS, and it joins the IGS network.

Three new survey machines (total stations) were purchased in 2024, utilizing the funds generated from the Geomatics course (external program) held in MLSC accounts, enhancing hands-on learning and technical training for students in the Survey Section. This investment in cutting-edge equipment is not only a valuable addition to student training but also plays a key role in the ongoing curriculum updates. By integrating modern surveying tools into coursework, we are ensuring that students are exposed to industry-standard technologies, preparing them for real-world challenges in geospatial sciences.

Curriculum Update

The Survey Section at PNGUOT initiated a benchmarking process with RMIT University at the beginning of 2024, aiming to enhance its curriculum and align academic programs with international standards. This collaboration focuses on curriculum upgrades, ensuring that courses remain relevant to industry demands and technological advancements.

The benchmarking process involves comprehensive evaluations of existing course structures, teaching methodologies, and the integration of research. Faculty members and academic leaders are working closely with RMIT experts to incorporate best practices in surveying education, including advancements in geospatial technology, remote sensing, and GIS applications.

As part of this initiative, the Survey Section is undergoing curriculum restructuring, introducing modernized course content that reflects global trends in land surveying, geodetic surveying, hydrographic surveying, and spatial data analysis. The collaboration also aims to strengthen research partnerships, fostering opportunities for joint projects, faculty exchanges, and student engagement.

The benchmarking process is expected to be completed by late 2025 or early 2026, marking a significant milestone in the Survey Section's academic development. Once finalized, the upgraded curriculum will enhance graduate employability, ensuring that students are equipped with cutting-edge skills to excel in the surveying and spatial sciences industry.

Students

In 2024, the Surveying Section had 100+ undergraduate students registered

Research and Publications

The Survey Section at the School of Surveying and Land Studies is committed to advancing research and innovation in geospatial sciences, land management, and surveying technologies. Our faculty and students actively engage in cutting-edge research, exploring areas such as land tenure systems, geospatial data acquisition, remote sensing, and unmanned aerial systems (UAS) applications.

All undergraduate and postgraduate students submit and defend a dissertation and/or thesis, respectively, in their final year, with due compliance with the plagiarism policy.

Consultancies

The School has undertaken various projects, including the 3rd phase of the seismic studies with Geoscience Australia. Staff and students continue to be involved in this project in the early part of Semester 1, 2024.

The Section has also been engaged to undertake a survey of the residential subdivision of staff housing next to the Habitat Rainforest on campus.



PNGUoT School of Survey and Land Studies Head, Dr Andrew Pai, opening the 2024 Association of Surveyors PNG

Global Surveyors Day 2025

Global Surveyors Day, observed annually on March 21, celebrates the indispensable contributions of surveyors in shaping infrastructure, land management, and geospatial sciences worldwide. Since ancient civilizations, surveying has played a crucial role in territorial mapping, land development, and environmental planning, evolving with advancements in GIS, LiDAR, remote sensing, and AI-driven spatial analysis.

This global recognition highlights the innovation and expertise of surveying professionals who continue to push boundaries in smart city planning, disaster management, and sustainable land use. Institutions and industry leaders mark the occasion with conferences, workshops, and networking events, fostering discussions on emerging technologies and industry challenges.

Looking ahead, surveyors remain at the forefront of scientific and technological progress, ensuring societies can plan, build, and grow efficiently. Global Surveyors Day serves as a platform to honour their lasting impact and to inspire continued investment in the profession for a more mapped, structured, and sustainable world.



Students celebrating the Global Surveyors Day, March 21st, 2024. Surveyors Day 2024 with a special event at Sandover Building, bringing together students, faculty, and industry professionals to honour the contributions of surveyors to land management, infrastructure development, and geospatial sciences. The celebration featured guest speakers, interactive sessions, and exhibitions showcasing advancements in surveying technology, including GIS, remote sensing, and drone-based mapping. Students engaged in networking opportunities with industry experts and alumni, fostering discussions on career pathways and emerging trends in geospatial sciences. The event reinforced the section's commitment to academic excellence, research innovation, and strengthening industry collaboration, ensuring surveying professionals continue to drive development and progress in the field.

Challenges and Recommendations

Despite its achievements, the Survey Section under the School of Surveying and Land Studies continues to face challenges that impact its ability to fully realize its academic and research potential. Outdated software limits students' and faculty members' ability to work with the latest geospatial technologies, affecting the quality of research and practical training. Additionally, limited funding for advanced research restricts opportunities for innovation, preventing the section from exploring cutting-edge developments in surveying, land management, and geospatial sciences. The need for continuous professional development among faculty members, including benchmarking initiatives, remains crucial to ensuring that academic programs align with global standards.

To address these challenges, the section is actively working to secure grants and funding to support equipment upgrades, ensuring that students have access to modern surveying tools and software. Strengthening industry collaborations is another key priority, fostering partnerships with government agencies, private firms, and international institutions to enhance internship programs, research opportunities, and knowledge exchange.

Expanding student exchange programs with global universities will provide students with international exposure, allowing them to learn from leading experts and gain insights into advanced surveying methodologies.

Moving forward, the Survey Section remains committed to overcoming these obstacles through strategic planning, resource mobilization, and academic partnerships, ensuring that students and faculty continue to excel in surveying and geospatial sciences.

2. GEOGRAPHIC INFORMATION SCIENCE (GIS) SECTION

(a) Mission Statement

GIS focuses on the collection, storage, retrieval, analysis and modelling of geographical data, while Cartography specialises in the best way to visualise and present the information. The two disciplines are closely related to other disciplines, such as surveying, geodesy, photogrammetry, and remote sensing, which focus on methods to accurately measure and collect information about features on the Earth's surface. Together, these fields constitute the high-tech mapping sciences, also known as geographic information science, or the science of analysing spatial data.

(b) Teaching and Curriculum Activities

Teaching GIS regular program (Bachelor in GIS), postgraduate distance program (Master's in S and GIS), and undergraduate distance program in Geomatics. Some other numerous activities that the section carries out include Visualising and effectively displaying complex spatial and socio-economic interrelationships. We are involved in the design, production, and use of maps and charts, utilizing data from physical, economic, social, and other sources, including surveys, censuses, remote sensing, and existing maps. Conducting research in ways to improve the mapping process and develop more efficient ways of representing geographical features, creating and storing complex spatial objects, and handling features that change through time. The GIS Section at PNGUoT initiated the course review process with RMIT University at the beginning of 2024, aiming to enhance its curriculum and align academic programs with international standards, as well as further benchmark the program. The benchmarking process is expected to be completed by late 2025 or early 2026.

(c) Graduated

The section produced a number of graduates in the year 2024. The list is given below

Course/level	No. of Graduates
Undergraduate - GIS	32
Undergraduate Geomatics (Distance mode)	6
M.Phil.	3 [Den EINSTEIN, Herro Jack LOSEA, & Diandra Joy OLI]
Ph.D.:	1 [Dr. Clifford Jn. Mespuk]

(d) Research and Publications

Staff from the GIS section are actively involved in finding Disasters, Risks, and Disaster Management, disasters linked to climate change, and tectonic activities.

The human resources developed in the school have broad exposure to the state-of-the-art technology, e.g., recent developments in Remote Sensing, Geographic Information Systems, Photogrammetry, Global Positioning System / GNSS, use of the latest Total Stations and allied implements of the digital era. The Section is also involved in many research programs, including GIS, remote sensing, and cartographic communication through thematic maps, and student projects.

GIS staff members are actively involved in continuous publication in peer-reviewed journals, book chapters, and presenting at scientific conferences. The list of all the publications are listed below:

(e) Consultancies undertaken by the GISci section

1. Samanta, S. and Sekac, T (2021 to Present) as Team Member, Collaboration project, Australian Centre for International Agricultural Research (ACIAR), Better soil information for improving PNG's agricultural production and land use planning – Building on PNGRIS and linking to the Pacific Regional Soil Partnership, Project number-SLAM2019106
2. Adu McVie, R., Koloa, C. & Kwauidi, C. Collaboration research within the School of Survey & Land Studies. The team has completed the pilot study and is now proceeding to the next phases of the research project. Topic: Classifying Knowledge and Innovation Places in Papua New Guinea: Adoption of a Modified Innovation District Classification Framework. Funded by PNGUoT's PGSR&I

3. PROPERTY STUDIES SECTION

Mission Statement

To take a proactive and strategic approach to fully integrating all aspects of real property, enabling the graduates to take on the challenges in this country, other South Pacific nations, and global property markets, and to prepare students for various vocations with interests centered on real property.

Teaching and curricular activities

Teaching and curricular activities

The Section undertakes the following as part of its teaching activities at the undergraduate and postgraduate levels:

- Valuation—Land and property valuations are used to assess market value (MV), statutory valuation, compensation assessments, indemnity/insurance, financial investment analysis, and others.
- Land development and property management – focusing on the development process, lease management, repairs, property economics, and planning with other physical and financial management aspects.
- Land Administration—Engages in carrying out Social Mapping, Land Investigations, and ILG processes and formalizing them using the Land Administration Processes.
- Distance Mode of Learning -The Section through Distance Learning (DODL) in 2019 introduced a master's degree program in Urban & Regional Planning (MURP); however, the program was shelved due to its inability to enroll the required number of students in 2020. The program is anticipated to recommence in 2025.

- E-learning through Online Teaching—The Section through the DODL introduced online teaching in 2022. 2024 is its third year in the program. It runs concurrently with the conventional program on campus. Due to high demand, the number of students enrolling is expected to increase in successive years. Moreover, Property Studies was one of the first sections to venture into the online program apart from the conventional mode (on-campus) delivery proposed by the Academic Board in 2021. Modules were developed by the section teaching staff and delivered effectively to date. The Section is anticipating its first online graduation in 2026.
- Our post-graduate program in Property Studies has been rejuvenated after being dormant for a while. The master's degree and doctoral degree in property studies (MPhil & PhD) through research are ongoing and available to prospective students.

The section is currently reviewing its curriculum restructuring for the four subject areas. The four-year cycle of the 4 subject per semester syllabus expired in 2023.

Benchmarking and accreditation, which have been the focus of the University, are ongoing, and the Section is progressively taking action this year.

Way forward

The section's focus on the priority areas would be on.

- Benchmarking and accreditation.
- Purchase of teaching & learning materials.
- Coordination & Completion, and Review of Online Degree Course.
- Support the section's staff for PhD Studies and the continuous professional development program.

4. MELANESIAN LAND STUDIES CENTRE

(a) Vision

To be an internationally recognized Centre of Excellence which deals with a wide range of issues relating to modern land development and resources management that are of academic and socio-economic significance to Papua New Guinea and the South Pacific Region.

(b) Mission

To serve as a central source of an extensive range of knowledge, expertise, and technological skills in land and resource management in PNG and the Pacific region.

(c) Objectives

- facilitate the cooperation and coordination of disciplines involved in the study relating to land management, land administration, land development, land adjudication, land use planning, urbanization and housing studies, land and geographic information systems, Remote Sensing, Photogrammetry, Geodesy, leading to land surveying and mapping, infrastructure development planning
- provide consultancy, continuing professional development, and advisory services on land and resource development/management related matters in PNG and in the South Pacific Region, in keeping with the dynamic requirements of the industry

- support research and development of technology appropriate to land and allied disciplines
- encourage, nationally and internationally, collaboration, sharing, and exchange of information with institutes and universities with similar interests
- publish papers, reports, and journals related to land-related issues regularly
- encourage the collection, storage, and dissemination of information related to various allied disciplines, undertake, support, and collaborative research in land and land-related disciplines.

(d) Staffing

As at 2024, the Department of Surveying and Land Studies MLSC appointed a faculty member, Dr. Rosemary Adu Mcvie, as its acting Director. MLSC does not have a substantive staff position since its inception in 1983. The academic staff member is expected to perform his primary academic responsibilities and the Centre's activities are taken as supplementary duty.

Hence, the activities of MLSC undertaken to date have been either a directive or a request from the University, or in response to a request or an apparent need from the industry. The Centre did not have planned activities in past years, apart from the series of CPD short courses that it coordinates and offers on behalf of the Department of Surveying & Lands Studies (DSLS) to land professionals and other interested persons in the public domain.

To attend to the administrative and logistical tasks of the short courses and other consultancies, the Centre must engage academic staff, technical staff, and secretarial staff from DSLS. Those involved are compensated with their portions of fees and consultancies paid to them from the income generated. The current policy of 65% fee takings, after expenses, for the staff and 35% fee takings, after expenses, to be shared between Unitech, DSLS, and MLSC applies to all income generated.

(e) Consultancies

The Centre acts as a conduit for staff to be involved in consultancies such as Short Courses, Valuation Services, Surveying Services, GIS and Remote Sensing services, and Hire of Survey Equipment.

The various short courses that have been run include the following:

- Development Appraisal and Feasibility/Viability Studies for Economic Sustainability in PNG;
- Land Administration Process, Documentation and Land Disputes;
- Land Compensation Assessment;
- MapInfo Level 1 and GIS;
- MapInfo Level 2;
- GIS, Spatial Analysis, and Thematic Mapping using ArcGIS 9.1;
- Introduction to Surveying using GPS;
- Satellite Image Processing using ERDAS Imagine 8.5;
- Automated Surveying System; and
- High Precision Surveying and Processing data using GNSS note.

All other consultancy charges are guided by industry-set fees and market rates. Fees can also be negotiated as circumstances dictate. From gross earnings, expenses (if any) are deducted.

The 65/35 policy applies to the Net Earnings, where the facilitator to earn 65% of the net earnings, 15% goes to the MLSC, 10% goes to the DSLS, and 10% goes to the University.

(f) , including BSc in Geomatics, MSc in Urban and Regional Planning, in terms of logistical support and resources for staff and students, and administrative requirements.

(g) Constraints

MLSC is limited in terms of staffing capacity. It currently has a sole staff (Acting Director) who performs all the administrative functions of the Centre.

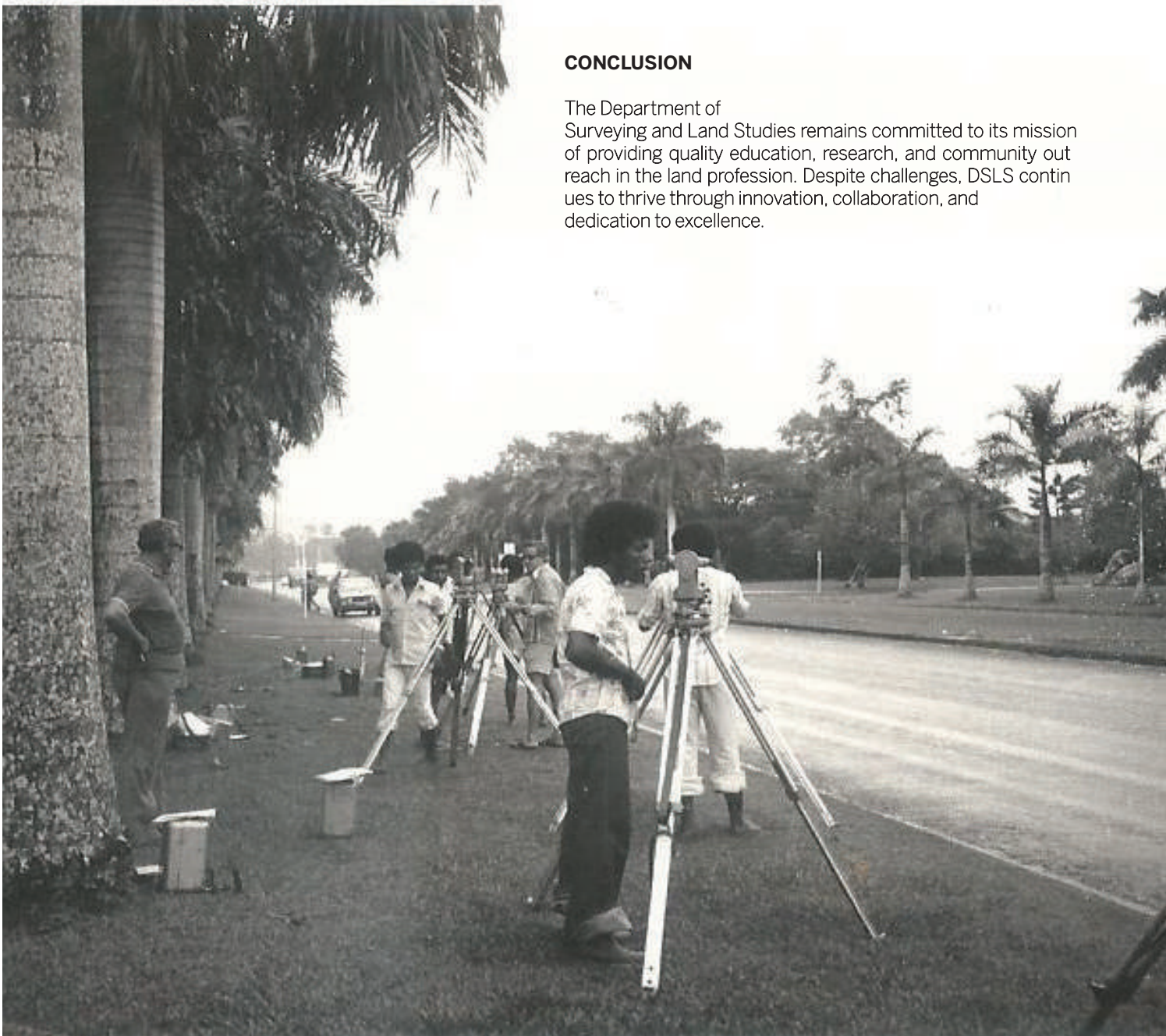
MLSC has not received any funding support from Unitech Management since 2010 and has relied on its own generated funds for all its operational activities, despite giving the University 10% of all the consultancy income generated.

(h) Going Forward

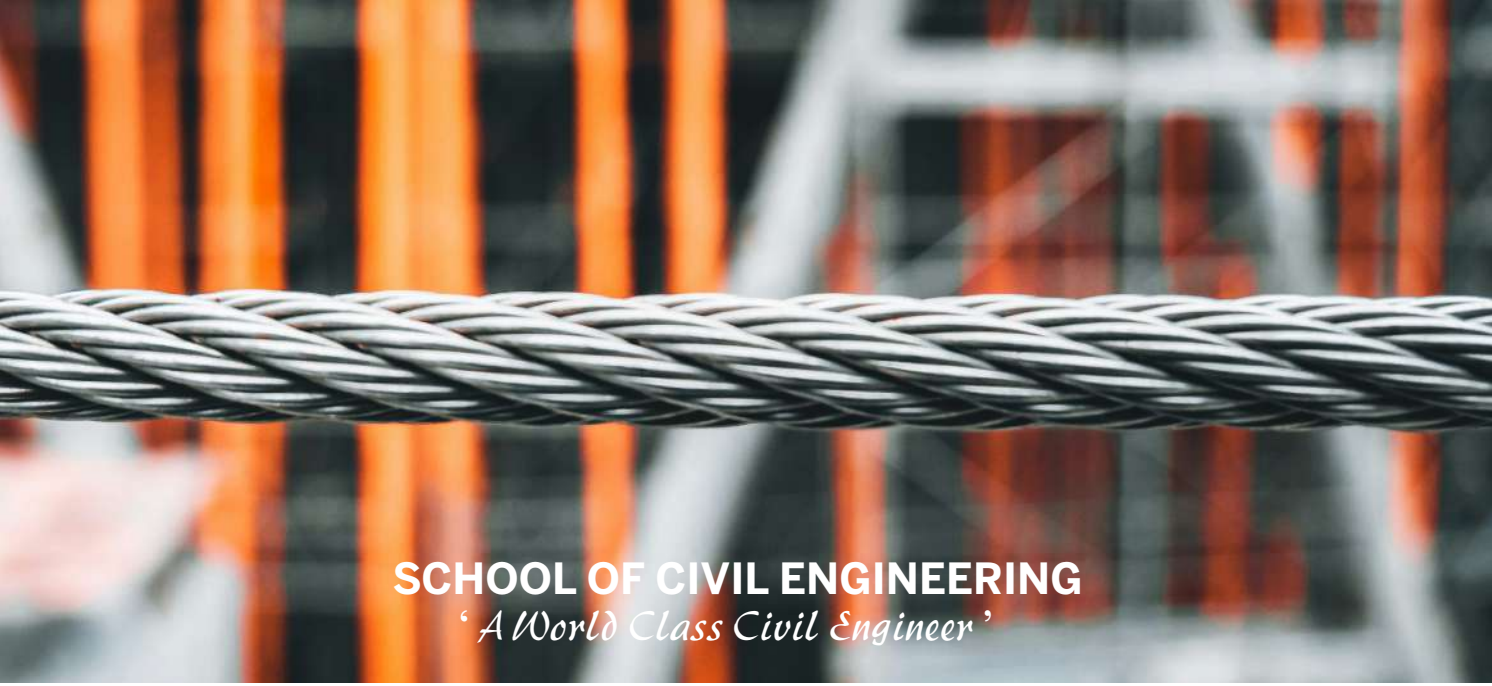
MLSC considers the need to review its existing strategic operational plan as paramount to align itself with the Unitech Strategic Plan 2020 to 2024. Its review process began in Semester 2, 2024. Importantly, MLSC should have the mandate to employ personnel to work under the centre to be realistically able to realise its vision, key objectives, and meaningfully contribute to the Unitech Strategic Plan.

CONCLUSION

The Department of Surveying and Land Studies remains committed to its mission of providing quality education, research, and community outreach in the land profession. Despite challenges, DSLS continues to thrive through innovation, collaboration, and dedication to excellence.



**FACULTY OF
ENGINEERING**



SCHOOL OF CIVIL ENGINEERING

'A World Class Civil Engineer'

Introduction

The School of Civil Engineering (SoCE) Annual Report 2024 is the School's summary of contribution to the realization of the University's 7 Strategic Domains: Inculcate best practices in Institutional leadership and governance, growing world-class technocrats for the real-world, cutting-edge research and innovation, optimum organizational effectiveness and performance, physical and virtual infrastructure, financial self-sufficiency, and Grow and expand community and industry interface.

This is a report on the School's achievement of its Mission: **"to provide an opportunity to grow world-class Civil Engineers or technocrats through high-quality experiential Teaching and learning, Research and development, External Collaboration and partnerships, Consulting Engineering, Commercial Testing, and Active Community Services with an ardent application of scientific and technological knowledge and innovation in Civil Engineering."**

Civil Engineering Other Highlights in 2024

SoCE's participation in the Faculty of Engineering bid led to the progress of the Full Accreditation to the Washington Accord under the management of Engineers Australia.

Among the significant activities that the School achieved are:

- Full Accreditation of the Program, Bachelor of Civil Engineering (Honours), B.Eng. (Civil) (Hons) on 18 December 2024 (<https://news.pngfacts.com/2025/01/papua-new-guinea-university-of.html?>)
- DHERT visit for the Engineering Program accreditation on 10 March
- Incubation Hub additional prototype from the class EN124 of 2024
- Design Show 2024, 11 October 2024
- Acquiring new lab equipment improves the real-world readiness of the six (6) laboratories: the Structural Lab, Concrete Lab, Geotech Lab, Transport Lab, Hydraulics Lab, and Environmental and Public Health Lab by providing hands-on activities.
- Industry collaboration with our Geotech Lab, Concrete Lab, Structures Lab, Transportation Lab, Environmental Lab, and Hydraulics Lab
- Global Virtual Conference in Civil Engineering (GVCCE) 2024
- Global Journal of Civil Engineering (<https://portal.issn.org/source/ISSN/2523-9597>)
- International Labour Organization (ILO) collaboration as a provider in the Capability Building of Government Engineers and contractors in the transport sector for the EU-STREIT PNG Program.
- Collaboration with the UEMC, BIM CYPE campus license
- Tunnelling Society Collaboration and Membership

Our annual accomplishments are outlined under our key points of difference, as detailed below.

Real World Experiential Learning (Teaching Activities, Curricula, Capability) - Physical and Virtual Infrastructure

Towards the bid for full accreditation of the newly refreshed Bachelor of Civil Engineering (Honours) program, which gained provisional accreditation in 2019 from Engineers Australia under the Washington Accord, we are continually improving our curriculum by reviewing the subjects offered. There are three (3) minors offered by the School of Civil Engineering undergraduate Program, such as: Structural Analysis and Design, Fluids, Hydraulics & Hydrology, and Environmental & Public Health. Two coursework Master's programs are offered in Postgraduate: Master of Engineering in Civil Engineering, M.Eng. (Civil Engineering) (Structural); and Master of Science in Solid Waste & Resource Management (MSc SWRM).

On curriculum review of the program Bachelor of Civil Engineering (Honours), B.Eng. (Civil) (Hons), a workshop on mapping of Subject Learning Outcomes (SLOs) in line with Engineers Australia Stage 1 Competency (EAS1C) was conducted on June 11, 2022 which was part of the evaluation considered during the final visit on September 4-6, 2024, followed by the Department of Higher Education, Research, Science & Technology (DHERST). The Engineers Australia visit resulted in a full accreditation of the program given on 18 December 2024.

There are 56% nationals (5 full-time lecturers, and 4 part-timers) and 44% Expatriates (3 online and 3 on campus). The Executive Management System (EMS) of the SoCE are: Departmental Executive Committee (DEC), Student, Staff Liaison Committee (SSLC), Teaching, Learning and Curriculum Committee (TLCC); Research, Development and Engagement Committee (RDEC); and Departmental Industrial Advisory Committee (DIAC).

Student-Centred Learning Environment

The SoCE laboratories and collaboration with industries and other government and private agencies provided support to the in-house Professional Work Experience of the following students' vacation programs:

1. Microzonation in collaboration with Geoscience Australia
2. Laboratory technician (Concrete Lab, Structures Lab & Geotechnical Lab)

The School of Civil Engineering (SoCE) Learning Center has actively provided support for student study time during the day. The student classrooms are open for student studies during the night. Several talks were conducted on Professional Development by alumni and other professionals at the Student Learning Center together with the Civil Engineering Student Staff Association (CESSA). The informative sessions or talks provide opportunities for students to interact with industry experts to see how engineering concepts are applied in the real world and how the knowledge acquired is used to solve problems and develop work ethics through these industry talks.

Below is the list:

- Presentation by Professor Arnold Dix (President of International Tunnelling and Underground Space Association) - Presentation Topic: New Mining: securing national civil infrastructure funding via mining approval funding-the world has changed. Presented at the SoCE Learning Centre on 29th June 2024. This has become possible due to the efforts of Mr Lazaro Hemetsberger, the Vice President of PNG Tunneling Society.



Figure 1. Professor Arnold Dix on presentation

- RuTIMS (Rural Transport Information Management System) is a survey of roads in PNG using the RuTIMS software. Interested students participated in the training (online) from 18-21 June 2024 and then took part in the project, which is in collaboration with the International Labor Organisation (ILO).



Figure 2. Ms Cathy Lau (left) and Ms Monica Lopyui (right), both from M & E, DNPM at field work on CSM

- The GeoHECHMS webinar is an interactive showcase of the advanced features of GeoHECHMS, conducted by Phil Kramer, Water Resource Engineer at CivilGEO Engineering Software. Tuesday, February 27, 2024, 2-3 PM for the GeoHECHMS online webinar.
- Mastering Open Street Map: A Step-by-Step Guide to Efficient Mapping, conducted by Mr Rua Puka, the OpenMapping Guru Fellow of Open Mapping Hub-Asia Pacific, was held on 23 July 2024.
- MIDAS Seminar on November 18, 2024.

Ardent Application of Science, Technology & Innovation (Research & Publication)- Cutting-Edge Research & Innovation

The first-year subject Engineering Design (EN124) in semester 2 continued to showcase the utilization of waste to minimize the disposal of waste to landfills through another 53 projects in 2024 (waste2wealth.mystrikingly.com). The prototypes are housed at the Ron Lane Student Centre, dubbed as the Innovation Hub of the SoCE.

Our collaboration with GeoScience Australia continued after the Survey of Building Vulnerability to Microzonation, which provided professional work experience for civil engineering students in their fourth year. GeoScience Australia also sponsors attendance at the GEOANZ#2 Conference in Melbourne for an oral presentation, Geomaterials for Shoreline Protection.

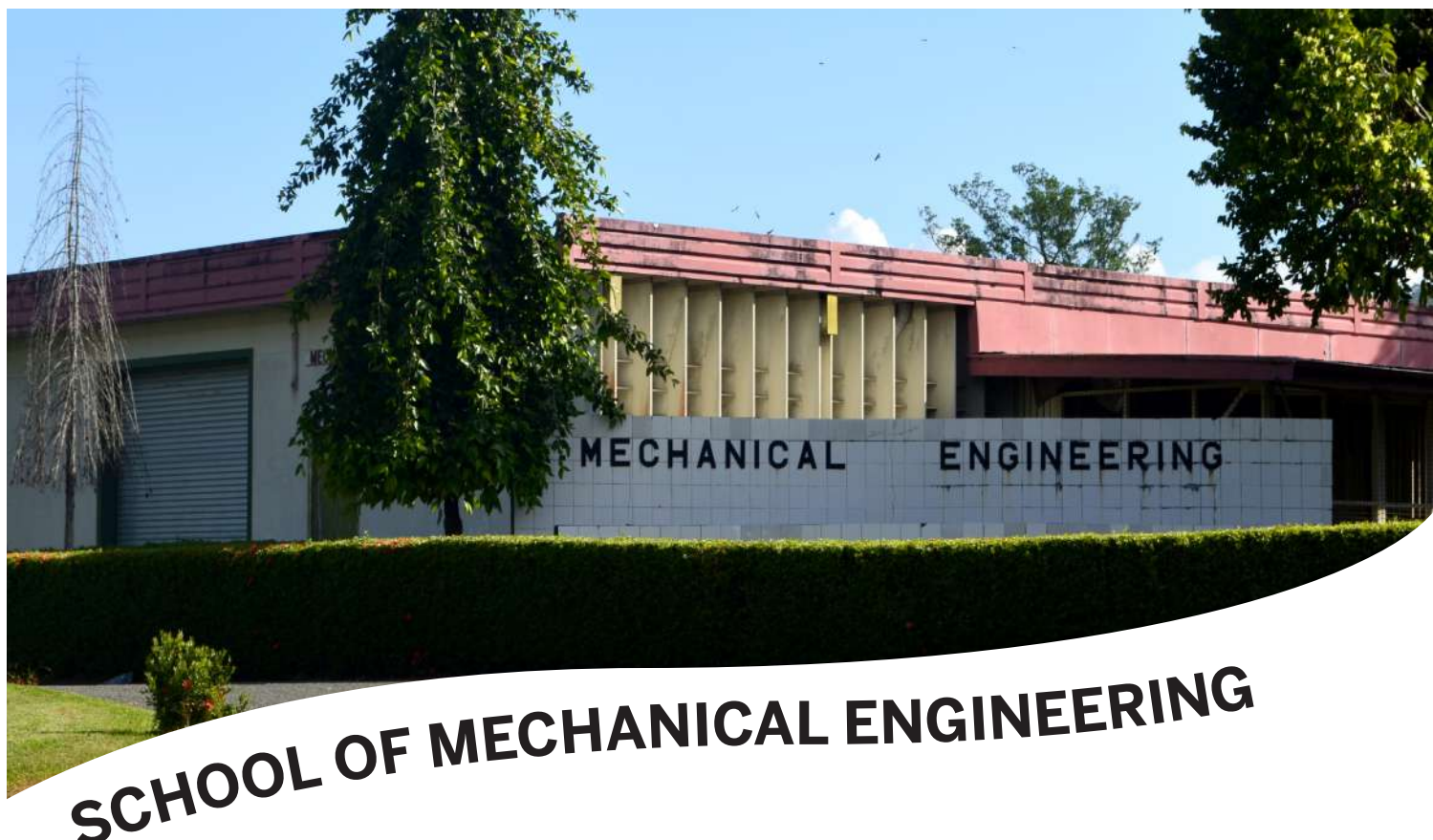
There is one indexed journal published, 8 non-indexed journals and 7 conferences attended by our staff and co-authors. There are two postgraduate MPhil students who have graduated. Undergraduate students undertake twenty-one (21) research projects.

Active Community Interface & Collaboration (Extension & Consultancies) - Financial Self-sufficiency

The collaboration with UEMC (Univ. Europea Miguel De Cervantes) continues the grant for its second year of a three-year term through a Memorandum of Agreement for a Building Information Management (BIM) Campus License software from CYPE.

The EU-STREIT PNG program in Wewak in collaboration with the International Labour Organization (ILO), the School of Civil Engineering consultancy team delivers capacity-building modules as follows: Preparation of an Annual Road Maintenance Plan (ARMPP Approach of Maintenance and Implementation Modality, Project Procurement Management, Feasibility Study and Detailed Project Report, Design of Rigid and Flexible Pavements, Modern Survey Techniques Using GPS and Total Station, Roadside Bioengineering and Slope Stability in Rural Areas, Material Testing Procedure and Laboratory Practice, Occupational Health at Site, Environmental and Social Safeguard in Construction, Arc View GIS Training, Primavera and Microsoft Project for Project Scheduling and Resource Planning, and Rural Transport Information management System (RuTIMS) and Construction Site Monitoring (CSM).

Earned K116,777.98, which has an increase of 50% from 58,918.10 Kina of last year's consultancy in collaboration with the following institutions: Parohu Engineers, Provincial Civil Centre, KEC International Limited, China Harbour Engineering, Boinamo Enterprises Ltd, China Wu Yi Co Ltd, Telue Institute, MCP, Gahuku Trading Ltd, Associated Mills Ltd, Shane Kopunye, Eliakim Trading, Melvin Ghwee, Eston Balson, Metallurgical Corp of China, Western Sons Limited, Butler & Associates, China Railway International Group Co., and LBG Construction.



SCHOOL OF MECHANICAL ENGINEERING

Introduction

The School of Mechanical Engineering at Papua New Guinea University of Technology (PNGUoT) was established in 1973 and is one of the oldest schools in the university. It supports engineering education at bachelor's, master's, and PhD levels for students from all island countries in the South Pacific except Australia and New Zealand.

To support its sustainable growth, the school adopted the university's strategic plan for 2020-2024. Based on this strategic vision, an operational plan and a succession plan have also been prepared. The School is also engaged with national communities from PNG to deliver projects for mutual benefit. Students enrolled in the Bachelor of Mechanical Engineering are also encouraged to align the objectives of their final-year projects with the country's socio-environmental problems.

The School of Mechanical Engineering benefits from provisional international accreditation of its Bachelor of Engineering in Mechanical Engineering and aims to achieve full international accreditation status. In compliance with accreditation guidelines, the School developed and implemented new curricula, introducing new subjects that reflect contemporary developments in the field, starting with the 2019 academic year. Currently, the School has attained full accreditation for its Bachelor of Mechanical Engineering (Honours) from Engineers Australia under the Washington Accord and also receives recognition from the Department of Higher Education, Research, Science & Technology (DHERST).

The school made continuous efforts toward the development of national and international partnerships and collaborations with industry and developed linkages with international institutions and partners like Lawrence Tech University in the United States, Concordia University in Canada, Brisbane University of Technology and University of New South Wales in Australia, American Society of Mechanical Engineers and Institute of Mechanical Engineers in the United Kingdom. Earlier, the School signed a Memorandum of Understanding with the University of Malaysia Perlis. Three academics from our school

initiated a joint research program on biodiesel with the University of Malaysia Perlis, which led to the development of the research paper *"Current Advancement in Global Bio-Hydrogen Production: Challenge and Future"*. Currently, the School has signed an MoU with the University of Malang, Indonesia, and collaborative research work is underway entitled *"Preparation of Aluminium-Based Metal Matrix Nanocomposites for Various Applications in Corrosive Environment"*.

Vision

The School of Mechanical Engineering aims to achieve national and international recognition by attracting, rewarding and retaining outstanding academics, students and support staff. It also aims to increase its contribution to scientific research at the international level.

Mission

Because of the growth and development in many industrial fields in the Pacific islands and keeping abreast of the continuous scientific and technological advancements in the field of mechanical engineering, the School of Mechanical Engineering sees its mission as follows:

- To educate competent, ethical, and morally grounded graduates of high quality and in sufficient numbers to serve the needs of Papua New Guinea and its neighboring island countries of the South Pacific in the field of Mechanical Engineering.
- To develop a strong graduate program to enhance scientific research, as well as active commercial and community service operations to further serve the needs of the country and the above-mentioned geographical area.

Curriculum Development

In compliance with international accreditation requirements, the School of Mechanical Engineering has undertaken a comprehensive review and redesign of its course structure. This process was conducted in collaboration with international partners ensuring alignment with global academic standards and incorporating valuable input from industry stakeholders. The revised curriculum is structured to offer four subjects per semester and places a focused emphasis on the following key fields of study:

- The development of a newly established Thermodynamics Laboratory is aimed at enhancing the foundational understanding of thermodynamic principles for second-year undergraduate students. The lab is designed to provide hands-on experience with key thermodynamic concepts, including heat transfer, energy conversion, pressure measurement, calibration, and the laws of thermodynamics. Through practical experiments and real-time data analysis, students will bridge the gap between theoretical knowledge and engineering application, fostering deeper comprehension and critical thinking skills essential for mechanical engineering practice.



Pressure measurement and calibration set-up



Temperature measurement and calibration set-up

- Feature-based 3D Computer Aided Design, Numerical Methods and Engineering Modelling with a focus on Static, Dynamic, Thermal and Computational Fluid Dynamics simulations based on the Finite Element Method. The fields of study mentioned above are supported by world-class computer equipment and experimental engineering equipment.
- Engineering Materials with a strong focus on experimental engineering and composite materials.

Thermo-Fluidics Engineering, with focus on Fluid Mechanics and Computational Fluid Dynamics, Thermodynamics, Thermo-Power Systems and Heat Transfer. The field of study is supported by advanced Computational Fluid Dynamics capabilities and experimental engineering capabilities.

- Flexible Manufacturing and Related Design Approaches. The field is supported by world-class experimental capabilities.
- Control Engineering, Mechatronics and Robotics. The fields are supported by world-class experimental engineering equipment.



Servos and Sensors Mechatronics Boards

The academic staff of the School of Mechanical Engineering includes seven PhDs in Mechanical Engineering, one PhD in Industrial Engineering, and one Principal Technical Instructor. A balanced team of faculty members, comprising young, mid-level, and experienced academics with national and international credentials and extensive scientific research experience, is one of the significant strengths of the school. In addition, the School is encouraging and constantly promoting its Bachelor's in Mechanical Engineering students to pursue post-graduate education towards the development of a viable pool of national workforce in the department.

Graduate Feedback

The courses offered by the School of Mechanical Engineering are tailored to conform to national and international industry standards and requirements. The courses are designed to enable our graduates to adapt and effectively respond to the real challenges encountered by the industries operating in PNG, as well as in other parts of the world.

One of the many such challenges faced by graduates is the ability to apply the knowledge gained during their enrollment in the bachelor's program, and translate it into practical industrial applications. Through new initiatives, such as industry visits, guest speaker invitations, the introduction of capstone graduation projects in the final year, and the application of the problem-based learning philosophy, the above challenge can be addressed.

The School of Mechanical Engineering has received very positive feedback from our industrial partners regarding our graduates' performance, particularly those employed in the Mining and Petroleum industries.

International Recognition

The Washington Accord, established in 1989, is an international agreement that sets global benchmarks for engineering education. Institutions accredited under this accord are recognized worldwide for producing graduates who meet international professional standards. The School of Mechanical Engineering's **Bachelor of Mechanical Engineering (Honours)** has received full accreditation from Engineers Australia under Washington Accord.

Graduation Projects and Relevant Preparation of Employable Graduates

Students enrolled in the Mechanical Engineering Course are offered hands-on training through projects and group work to better prepare them for the challenges of future workplaces. Our students are allocated final-year projects in both semesters, which are based on their preferences and designed to enhance their analytical, decision-making, and R&D capabilities, as required by potential national and international employers. It is important to mention some important achievements:

- The School of Mechanical Engineering's "Clutch Master" team won first place for their "Design of a Seed-sowing and Weed-removal Machine" in the SRS-hosted Tech nofest competition held on August 28, 2024.
- Sandy Stephen, a final-year student, received a grant from the Chinese government to visit the International Chinese Education College of Beijing Normal University.
- Industrial visit (field trip) to nearby industries including "Lae Biscuit" and "Paradise Foods" during September 2024. Regular industrial visits are integrated into the curriculum to expose students to real-world engineering practices and industrial operations. These visits help bridge the gap between academic learning and practical application, fostering industry readiness and professional awareness among students
- The school of Mechanical Engineering hosted 3 guest lectures to provide students with insights into current trends, emerging technologies, and real-world engineering challenges.
- Four of our academic staff initiated a joint research program on Metal Matrix Nanocomposites preparation with the University of Malang, Indonesia.
- Dr. Kamalakanta Muduli presented his research in the International Conference on Engineering & Technology (ICET - 2024), which was held on 20th - 21st June 2024 in Kowloon City, Hong Kong.
- Dr. Jack Khallahle published his research in the 24th Australasian Fluid Mechanics Conference (AFMC) held on 1st – 5th December 2024 in Canberra, Australia.
- Dr. Steve K. Ales presented his research paper at 13th International Symposium on Friction Stir Welding and 3rd International Joint Symposium on Joining and Welding held on 21-24 May 2024, in Japan.

Research and Publications

The academic staff of the Department of Mechanical Engineering is actively engaged in scientific research in their areas of specialization. In a 2024 summary, the scientific research materialized in a total number of:

- 24 International Journals:
- 10 Conference Proceedings
- 13 Internationally Published Book Chapters
- 4 Books Published

Some of our academics are appointed as external examiners for PhD and Master of Engineering dissertations and theses, by several foreign Universities.

Community and Industry Engagement-Consultancies

Two members of our academic staff serve on the Technical Vocational Education and Training Committee, which is responsible for reviewing tertiary institution curricula in compliance with the national PNGNQF standards. One academic staff member was elected Chair of the Mechanical Working Group with NISIT, based in Port Moresby and is also on the Academic Board of the National Polytechnic Institute of Papua New Guinea, based in Lae.

External Collaboration Activities

External collaboration activities are actively pursued to strengthen academic-industry linkages and promote interdisciplinary learning. Partnerships with leading industries, research institutions, and international universities facilitate joint projects, expert lectures, internships, and research opportunities, enriching the academic experience and enhancing student employability. The following activities have been achieved during AY 2024:

Staff Development

- Mr. Brian N'Drelan is in the process of finalizing his PhD dissertation in Mechanical Engineering titled *Failure of Components and Systems in Alluvial Mining Engineering* within our school. Mr Granville Embia, another PhD student, demonstrated excellent progress in his PhD work by publishing two research papers in journals.

Graduation Data

The School proudly announces that 57 students received a Bachelor's in Mechanical Engineering(Hons) Degree in the year 2024.



SCHOOL OF MINING ENGINEERING

The School of Mining in the Faculty of Engineering is a leading academic institution offering two (2) degrees – Bachelor of Mining Engineering & bachelor of Mineral Processing Engineering. The school is committed to excellence in mining education, research, and industry engagement within the mineral resources and energy sectors in Papua New Guinea. In 2024, the school sustained its trajectory of growth and innovation, emphasizing curriculum relevance, impactful research, and strategic partnerships to produce industry-ready graduates and advance mining, mineral processing and oil & gas sector knowledge, which is the ultimate mission of our school.

The year 2024 ended with a BIG BANG! Historical news of achieving full accreditation of our 2-degree programs – Bachelor of Mining Engineering (Hons) and Bachelor of Mineral Processing Engineering (Hons) by Engineers Australia according to the Washington Accord. The accreditation exercise for our engineering degree programs, in line with the overall PNG University of Technology's vision, took a tireless journey, which started back in 2017, and was awarded provisional accreditation in 2019. Full accreditation attained after 5 years in 2024. This puts our bachelor's degree programs in par with other international universities such as Australia, the USA, Canada, the UK, Europe, etc. that offer Mining Engineering (Hons) and Mineral Processing Engineering (Hons) accredited under the Washington Accord.

The School of Mining has continued to make great strides in the key areas of its main strategic pillars. In this report, a few highlights on the following are provided.

- Teaching and Curriculum Development
- Industry Advisory Group (IAG)
- Industry Based Real Life Final Year Project
- Short Courses & Community Services
- International research collaborations
- Staff News



Our Mission

- “To deliver dynamic mining and mineral processing engineering educational programs to graduates who excel in their chosen field, have a positive impact on their communities and become industry leaders”
- “To undertake applied, strategic and dynamic research that trains future researchers to take nationally and internationally leading roles in their field, support the development of sustainable extractive industries and enable major problems to be solved”
- “To engage with key stakeholders through relevant professional activities to assist individuals, businesses, the community and the government to achieve sustainable mining and other small-scale mining activities in enclave communities”

Our Vision

“To be the best engineering school of innovation, high-class engineering education and research activities that can make a positive difference to sustainable mining in Papua New Guinea”

Our Staff, Teaching & Guest Lectures

Our Mining School, although it offers 2 bachelor's degree programs - Mining Engineering (Hons) and Mineral Process Engineering (Hons), have 3 main sections – mining, metallurgy (physical mineral processing & extractive metallurgy) and geology. Our geology section only provides services to mining and mineral processing engineering. The academic staff members at the School of Mining are almost 100% national. The mining section is led by Dr Ken Kaepae Ail – Mineral Economist. Under him, we have seasoned academic staff like Mr David Pakne, a pioneer mining graduate at the school and specializes in resources evaluation and geostatistics, David Seteri – a petroleum engineer educated at Exeter University, UK. These staff are complemented by online lecturers – Professor Ernest Baafi of Wollongong University, Dr Clara Abuntori of the School of Mines & Technology, Ghana and Mr Emmanuel Buaba, a seasoned geotechnical engineer.

The Mineral Processing or Metallurgy section is full of highly qualified and experienced individuals who obtained their PhDs in some of the top universities in Australia, the UK and Japan. The section comprises of Dr Wilson Kobal – Hydrometallurgist, Dr John Witne – Biohydrometallurgist, Mr Francis Kisai – experienced metallurgist, Professor Prassana Y Kumar – Chemical Engineer, as well as Dr Jim Lem – froth flotation & process mineralogy specialist. Finally, the geology section has a very experienced resource geologist – Mr Yawas Dekba, who heads the section and delivers geology knowledge, including taking geology field trips for our 3rd year mining students.

In addition to these academic staff on the ground, we usually have several guest lecturers (practicing senior engineers), particularly from the mining, oil & gas industries. In 2024, our guest lecturers came from Hidden Valley Mine, Porgera Gold Mine and K92 Gold Mine. These practicing engineers come during their field breaks and give lectures on specific areas in surface and underground mining, Geotech, dispatch, mineral processing, process control & instrumentation, process plant optimization & design. Some of our one-day guest lectures focus on broad areas with an emphasis on advances in technologies in mining and mineral processing.

Curriculum Review, Laboratory Upgrade and Accreditation

Dating back to 2018, our curriculum has undergone a major review. This curriculum review was conducted to meet the new accreditation requirements of 4 subjects per semester, from the 1st year to the 4th year.

This major review also encompassed common subjects from 1st year to the final year across the 5 engineering degree programs offered at the Faculty of Engineering. These common subjects are designed as EN, e.g. EN411. This concept brought upon the students the spirit of oneness, a sense of belonging, engineers specializing in different areas (e.g. mechanical or civil) are part of a bigger picture; the engineering team work in a specific area in a team to bring about the intended outcome.

This whole process has been meticulous and tedious, which included several consultative meetings with overseas universities for benchmarking, input from wider stakeholders – alumni, mineral & energy resources industries, government, including public. This also included a major facelift and upgrade of our teaching facilities, including our four major laboratories in the department – mining, physical mineral processing, pyrometallurgy & hydrometallurgy and geology.

The whole curriculum review and accreditation exercise resulted in our degree programs being upgraded from PNG NQF level 7 to PNG NQF level 8, honours level. In 2024, a team from Engineers Australia (EA) visited PNGUoT and meticulously assessed our revised curriculum, which had provisional accreditation. By December 2024, our programs received full accreditation by EA under the Washington Accord.

Industry Advisory Group (IAG)

IAG, which was established in 2023, had unprecedented regular meetings (monthly) in 2024. The School of Mining established the Industry Advisory Group (IAG), which was formerly known as MIAC (Mining Industry Advisory Committee). MIAC was established to have a strong connection with the mining industry after the establishment of the department of Mining Engineering. As time went on, MIAC lost its value, and the School of Mining had no regular connection with the industries until 2023, when it was revived and MIAC was renamed IAG. Our current Chairman is Mr David Wissink -Head of External Affairs, Sustainability & Development of Wafi Golpu and deputy chairman is Mr Philip Sarma – Deputy President of K92 mining. IAG has the following industry members.

- **Mrs Pansy Taueni Sialis – Chief Operating Officer of PNGCORE**
- **Mr Dexter Wagambie – Corporate Affairs Manager of OTML**
- **Mr Philip Samar - K92 Mine**
- **Mr Cornelius Soagai – Rio Tinto**
- **Mr Stanley Komunt - Newcrest**
- **Mr Joel Hamago – Country Manager of Pan Aust Frieda Copper**
- **Mr Tommy Tomscoll - Ramu Nickel Cobalt**
- **Mr Ron Gawi – Highlands Pacific**
- **Mrs Gretel Orake - PNGCORE**
- **Dr Jim Lem – Head of School of Mining**

Meetings are held once every month in person or virtually via Zoom and this has been very consistent throughout the year. One of the outcomes of this IAG is that all our final year students completed their 450 hours of Professional Work Experience (PWE) requirements in 2024, which is mandatory for students to be eligible to graduate.

Other issues that this committee addressed include curriculum review, guest lectureships and staff engagement in the mining industries.

Industry Based Real Life Final Year Project

The school continues to gain momentum in engaging with the mining industry. In 2024, the school received up to 10 real industry based final year projects.

Some of these research projects include the following.

1. **Water in underground mine removal – K92 mining**
2. **Geotechnical challenges – K92 mining**
3. **Grindability**
4. **Optimum collector type and dosage**
5. **Process mineralogy of fluorine in the K92 ore**
6. **P80 grind size of K92 Au ore**
7. **High gold losses in tailings**
8. **Optimizing recovery of the gravity unit at K92 mine processing plant**
9. **Reprocessing of mill tailings to optimize gold recovery**
10. **Environmentally benign approaches to gold leaching**

Some of our students working on these K92 mine projects were employed immediately upon completion, a testament to the quality of our students' projects in the School of Mining. Our students have also participated in the development of alluvial gold with the Oro Miners.

Short Courses and Community Services

Offering short courses and providing professional advice, as well as engaging with industry and external partners through consultancy, is gaining recognition again in 2024. The School of Mining continues to conduct several short courses for the industry as part of its ongoing service to industry employees' professional development needs. Some of these courses were conducted at the request of industry as they see the need to upskill their workforce.

This year, the School of Mining successfully ran the short course on **Occupational Health and Safety Engineering**. Upon completion, the course participants were awarded **Certificate level I, level II & level III**.

On the community services front, the school continues to reach out to locals who have alluvial gold deposits. In the year 2024, a team from the school, comprising Dr Jim Lem, Mr Samadin Mark, and Robert Koek, travelled to the remote Raicoast in Madang Province to educate and assist in alluvial gold mining.

International Research Collaboration

The School of Mining continues to enjoy international collaboration with some of the world's top universities. The work with Harvard University continued in 2024. The outcome of this resulted in Dr Jim Lem jointly publishing a paper with the top journal in the world – Elsevier. Such a joint publication promoted PNGUoT's recognition on the international stage.

In 2024, also collaborating with UNSW. Dr Jim Lem traveled to UNSW and spent 4 weeks. During this time, he was involved in teaching, supervision of PhD students and networking (see linked: <https://lnkd.in/gVG82gwa>).



(insert) Dr Jim Lem giving a lecture to the staff & PhD students of the School of Mineral Resources & Energy, UNSW, Australia■

STAFF NEWS

Professor Prassana Y Kumar, a chemical engineer, joined us in 2024. He is the first overseas academic since 2010 to be recruited to the School of Mining.





SCHOOL OF ELECTRICAL & COMMUNICATION ENGINEERING

About the School

The School of Electrical and Communication Engineering (SoECE) is expected to deliver tangible outcomes that benefit all stakeholders through the School's professional knowledge and research capabilities, aligned with several key National Strategies, Development Plans, and Policies. Some of the key strategies and policies include the Vision 2050, PNG Strategic Plan (2010-2030), Medium Term Development Plan IV (2023-2027), National Energy Policy (2017-2027), National Higher and Technical Education Development Plan (2021-2030), and the PNGUoT Strategic Plan (2020-2024). Thus, the SoECE's Operational Plan (2023-2027) is aligned with the strategies above and policies to produce better-prepared graduates and enhance the institution's competitiveness globally.

The School's present strengths are Communication Engineering, ICT, and Electrical Power Engineering. Furthermore, the SoECE is revitalizing its strengths in renewable energy and computer engineering. The School will recruit qualified staff and provide facilities that meet international benchmarking standards. These will be necessitated by establishing laboratories and research centers, and further through postgraduate training.

Vision

To be at the cutting edge in teaching and research, generating and applying electrical engineering knowledge, and graduating globally competent professional electrical engineers with high ethics and human values.

Values

In pursuit of our vision, the School of Electrical and Communication Engineering will be guided by the following core values:

- Providing equal opportunity for education to students in Electrical and Communication Engineering through academic merit and character.
- Developing and maintaining partnerships with industries, professional groups, and other educational and research institutions at both national and international levels.
- Encouraging a climate of transparency, fairness, and cooperation among the staff members and the students.
- Practicing sustainable use of resources.
- Fostering an ethical workplace environment.

The SoECE's mission and values align with the core business of the PNG University of Technology, which is founded on quality teaching, learning, and research. By the end of 2024, the School of Electrical Engineering, along with the other three engineering schools within the Faculty of Engineering, achieved full accreditation from Engineers Australia, graduating world-class technocrats. Additionally, the School is committed to establishing a solid foundation by enhancing undergraduate teaching and learning, which will lead to its primary goal of achieving full accreditation per international standards.

Undergraduate Program

The School continues to align its operational plans for 2023-2027 to pursue long-term goals of sustained excellence in research, teaching, and active community outreach. One of the priority areas is attracting top-notch school leavers into the program. Gender inclusion has been a road-map to success in enrolling more female students in the undergraduate program. The student enrolment statistics since the commencement of the accreditation program from 2019 to 2024 are provided in Table 1.

Undergraduate student enrolment statistics																		
Students' enrollment statistics through the Accreditation Program																		
201 9			202 0			202 1			202 2			202 3			202 4			
T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	
50	4	46	5	10	4	6	1	7	4	1	6	55	63	15	48	7	14	52

T -Total/year F- female M- male |

Further, the SoECE is introducing a new program in Computer Engineering. The School expects 20 students in the first intake of students in 2026. The new degree program in computer engineering has the potential to double the number of undergraduate students in the SoECE over the next 5 years.

In 2024, the SoECE has integrated Virtual Laboratories into its curriculum to enhance student learning. The course EE417-Digital Signal Processing has included virtual labs for the first time in the school to conduct three experiments through virtual labs, along with some physical labs. Two labs were conducted in physical mode as well as via the virtual labs platform, and results were compared. The results were found satisfactory and in compliance. It was a wonderful learning experience for the students and instructors, and observed the following:

- Exciting teaching and learning experience using virtual labs
- Innovative lab protocols and simulations
- Exemplary Practices in DSP virtual labs

The school also organized an online guest lecture on "Introduction to Virtual Labs" to know the requirements and process of using of virtual labs. The lecture was conducted by Dr. Saneesh PF, Project Manager and Technical Lead for Virtual Labs at Amrita Vishwa Vidyapeetham, Tamil Nadu, India.

Postgraduate Program

The School of Electrical and Communication Engineering has a thriving postgraduate program comprising a Master of Philosophy by research, a Master of Science in Communications Engineering by coursework, and a research-based PhD program. Four candidates are enrolled in the research-based Ph.D. program, six students are undertaking an M.Phil. research degree, and two are Master of Science in Communications Engineering by coursework.

The research programs in the School are continually developing to keep pace with technological advancements. In embracing digital transformation, the Communication Engineering stream has embarked on research on networking through mobile and wireless systems, data communications, and Internet-of-Things applications in Smart Cities. The School is also excited to introduce a new program in Computer Engineering encompassing microcontroller-based embedded systems design, big data analytics, robotics, and machine learning. Furthermore, as the world embarks on measures to mitigate the abyssal climate disasters, our research programs on energy are aligned towards an innovative, sustainable future energy. Introducing AI in energy systems will revolutionize renewable energy, making it reliable, efficient, clean, and environmentally friendly. The research on sustainable energy is oriented towards microgrids in off-grid systems for remote and fragmented communities in addressing the lack of electricity in PNG, where 80% of the 9 million population have no access to electricity. Further, research on Power Systems includes the reliability of PNG power grids.

Staffing

One of the key priority areas is the implementation and sustainability of staffing. The School of Electrical Engineering plans to have about 70% of the full academic carders to be filled by national staff members. The School is focused on the next 10 years to have 90% of national Ph.D. degree holders who can work together, giving significant research leadership nationally and globally.

Our professional staff are dedicated to research, education, innovation, and service excellence. The School of Electrical and Communication Engineering staffing comprises 11 full-time academics, five sessional academic staff, two online Professors, and 10 technical and administrative staff. The staff research profiles are presented below.

Staff Research Profiles

Professor Paul Hoole	Artificial Intelligence in engineering systems, Sensors including antennas, Lightning engineering, electromagnetic signals in safety and security systems, 5G/6G wireless technology for smart cities.
Professor Kanthavel Radhakrishnan	Artificial Intelligence, Deep Learning, Big Data, Wireless Sensor Network, High Performance Communication Network, and Cloud Computing
Professor Raj Kumar	Smart Systems and Instrumentation, Embedded System Design, Battery Management System, Machine Learning, Internet of Things (IOT), Digital Signal Processing, Communication Engineering, Outcome Based Education
Professor Kandasamy Pirapaharan	Computational Electromagnetics, Wave Propagation in Inhomogeneous Media, AI based Smart & Reconfigurable Antennas and AI based solutions for Climate Changes.
Dr Ashish K. Luhach	Soft Computing, Networks, Sustainable Computing, and Cyber Physical systems.
Dr Joseph Fisher	Interactions of Lightning with Aircraft and Structures, Power System Analysis, High Voltage Engineering, Power Electronics and Machines, Renewable Energy, Transmission/Distribution Line Design, Energy Audit and Energy Efficiency Technologies
Dr. Ravindra Luhach	Digital Filters and VoIP, IOT, Electronics Engineering and Microwave and Radar.
Dr. Sammy S. Aiau	Control Systems Engineering, Industrial Process Control, Electrical Power Systems, Renewable Energy (hydro, solar & wind), Smart Grids Energy Management, Virtual (Smart) Instrumentation Systems
Mr. Herman Kunsei	Adaptive Array Antenna Systems for 5G and 6G Networks, Electromagnetic Health Hazards, Propagation Measurements for Wireless Systems, Computer Network Security, Reliability in Networks, and Data Security
Mr. Gibson Kupale	Technical & non-technical losses in Power Systems, Power System Protections, Renewable Energy Systems, and Distributed Renewable Energy Generation. System Reliability & Security, and Field Excitation & Governor Control
Mr. David Chen	Big Data Processing, Compiler Design, Internet of Things Wireless Networking and Signal Processing, Hardware Design, Data and Network Security, Business Process Modelling, Knowledge Management, and e-learning.
Mr. James Dugumari	Data Communications and Networks, Computer Architecture & Interfacing, and Computer Communication, Database, eCommerce and Inventory tracking applications
Mr. Joshua Yuanko	Optimization and Auto Scheduling Algorithms, Power Flow Control and Automatic Topology Reconfiguration, Power Systems Static and Dynamic Reliability, Grid Connected PV Plant Design and Modelling, Instrumentation and Microcontroller Electronics.

ECE Accreditation Progress

The SoECE has undergone a vigorous course restructuring to meet the Engineers Australia (EA) Stage 1 Competency Standards. The accreditation process is part of the PNG University of Technology's Strategic Plans to have its engineering programs accredited by a signatory to the Washington Accord. The PNGUoT strongly and materially supports this objective in partnership with industry through the Industrial Advisory Board (IAB).

EA granted the SoECE full accreditation in September 2024 by Engineers Australia (EA) under the Washington Accord. Other accreditation requirements include furnishing all laboratory equipment. The School has the latest state-of-the-art laboratory equipment in both the Power and Communications streams. The SoECE continues to incentivize students with awards for the best students at all levels of the program of study. Thus, recognizing students for their effort and hard work encourages them to achieve high honours class degrees in the Bachelor of Electrical Engineering (Honours) major in Power and Communication under the fully accredited program.

Research and Publications

Strategically, the school continues to pursue long-term goals of sustained excellence in research through postgraduate studies. The School academics published 4 research articles in peer-reviewed journals and 6 book chapters.

Community Outreach Program

The School of Electrical Engineering is also reaching out to rural communities through power and communication projects. Final-year students are involved in their final-year projects to assist rural communities with various power and communication needs. In 2024 the following final year feasibility study projects were carried out:

1. 3kW Battery-Based Pico-Hydro Installations, Testing and Commissioning at Tambul District, Western Highlands Province, PNG.
2. Pico-hydro Feasibility Studies, Electrical and Mechanical Designs and Installations at Knogumul Village, Kerowagi District, Simbu Province, PNG.
3. Design of a Cost-Effective and Sustainable Uphill Irrigation System for Rural Areas: Case Study Bena District, Eastern Highlands Province, PNG.
4. Off-Grid Solar Power System for Tewai Siasi District, Morobe Province, PNG.
5. Wind Power System for Gagidu and Sialum Townships, Finchaffen District, Morobe Province, Papua New Guinea.
6. Hydropower System for Bundi High School, Bundi District, Madang Province, Papua New Guinea.
7. Hydropower System for Hawa Correctional Institute Service (CIS), Tagali LLG, Tari-Pori District, Hela Province, Papua New Guinea.

In the communication field, several final-year students were engaged in developing tools required for the project to monitor and evaluate the operation and performance of community Wi-Fi sites, assessing their sustainability from 2022 to 2025.

Five primary schools in remote rural areas across five different provinces were selected to participate in the project. All installations were concluded in September 2024. Site administrators, usually the school's IT staff, were equipped to manage and administer the systems in August 2024.

Of the five installed sites: One site functioned well for at least three months. Dor Primary School, Karkar Island, Madang Province. One site went down two days after installation. Koinabe Primary School, Lower Jimi, Jiwaka Province. One site was only partially installed. Wantoat Primary School, Wantoat, Morobe Province. Two sites experienced issues with the management device. Mendo Primary School, Kagua Erav, Southern Highlands, and Kiseveroka Primary School, Lufa, Eastern Highlands Province.

While the project showed promise, significant work remains to ensure the concept is viable in rural areas. Some of the key infrastructure challenges included the lack of skilled administrators, the availability of compatible devices, and the appropriate level of digital literacy.

The next phase of the project is to develop resource centres equipped with devices to connect the locals to the internet, a projector for training purposes and a printer for hard copies of the communication products. With the partnership of ITU DTC, digital literacy training and entrepreneur and business skills training can be conducted to help the community become engaged in socio-economic activities, contributing to the development and well-being of the local community. This is anticipated to happen in mid-2026 subject to availability of funding.

Milestones

The SoECE graduated three postgraduate students in 2024. One for a Ph.D. degree, one for an M.Phil. research degree and one for an M. Eng in Communication Engineering by coursework. Furthermore, the SoECE has submitted three additional postgraduate theses at the end of 2024 for assessment by external Examiners. One is an M.Phil. research, and the other two are M. Eng degrees in Communication Engineering by coursework. The conferral of these postgraduate degrees will be a significant achievement, with the addition of Master's degrees awarded by the School of Electrical and Communication Engineering.



FACULTY OF HUMANITIES





SCHOOL OF BUSINESS STUDIES

Overview

The School of Business Studies (SoBS) at PNG University of Technology (PNGUoT) stands as the largest and one of the most dynamic academic units among the university's thirteen schools. With an annual enrolment exceeding 700 students across both undergraduate and postgraduate programs, the School of Business Studies plays a pivotal role in shaping the future of business leadership in Papua New Guinea (PNG) and the broader South Pacific region. As a multidisciplinary institution, the School of Business Studies has consistently demonstrated its ability to foster academic excellence, producing a legacy of national, regional, and international leaders. Our distinguished alumni have made significant contributions to PNG's industrial, governmental, and business sectors, positively impacting the country's development for decades.



Figure 1. School of Business Studies students who Participated in a Week-long Military Boot Camp at the Igam Barracks are graduating on the 7th of June 2024.

Vision Statement

Our vision is to transform the School of Business Studies into the most innovative, entrepreneurial, and student-focused institution within PNGUoT, establishing it as a premier hub for business education in PNG and the South Pacific region. We aim to be recognized for our commitment to excellence in all dimensions of teaching, learning, research, and community engagement. Through our specialized programs in Accounting, Applied Economics, Entrepreneurship, Information Technology, and Management, we are dedicated to developing graduates who are not only academically proficient but also equipped with the skills and mindset to become global leaders in the ever-evolving business landscape. Our mission is to create an environment where innovation thrives, and students are inspired to challenge boundaries, think critically, and contribute meaningfully to their communities and beyond.

Programs

The School of Business Studies at PNG University of Technology offers a diverse range of undergraduate programs designed to cater to the varied interests and career aspirations of students. These include four primary streams: Accounting, Applied Economics, Business Management, and Information Technology. Students have the opportunity to apply directly to any of these specialized programs, allowing them to focus their academic journey on the area that best aligns with their career goals. Each of these undergraduate streams is carefully crafted to bridge the gap between theoretical knowledge, practical skills, and real-world application, ensuring that graduates are well-prepared to excel in their chosen fields.

In addition to its undergraduate offerings, the School of Business Studies offers a comprehensive suite of postgraduate programs designed to foster advanced knowledge and research in key areas of business and technology. Among these is the Doctor of Philosophy (PhD) program, available in Information Technology, Applied Economics, and Finance and Banking, designed for those pursuing academic and research-oriented careers.

The School of Business also offers a Master of Philosophy (MPhil) in Information Technology, Economics, Finance, and Banking, providing a more focused path for students who wish to engage in research at the postgraduate level.

Building on its success, the School of Business Studies has recently introduced a Master of Coursework in Economics and Accountancy, further strengthening its graduate offerings in these essential areas. Continuing to meet the needs of working professionals, the School of Business offers both a Master of Business Administration (MBA) and an Executive Master of Business Administration (EMBA). In 2025, the first cohort of the EMBA program will begin in Port Moresby, marking a significant milestone in the School of Business's commitment to delivering high-quality, flexible education for professionals seeking to enhance their leadership skills and business acumen.

Figure 2. An Example of a Recently Introduced Post Graduate Course (Master of Applied Economics)

Our teaching philosophy creates an environment that provides experiences that foster personal insights and a rich understanding of the resource material with cases, exercises, and projects that encourage the spirit of inquiry; encourage students to differentiate between data and knowledge; encourage students to interact with people in the real world; encourage students to address real-world challenges; and encourage students to reflect on their own perceptions, values, behavior, and experiences. After all, student-centered empowerment is the final outcome of our teaching philosophy by inculcating all necessary skills to practice as a professional applied economist in any business setting. We keep the PNGUoT Economic section niche of heavy quantitative approach, combining the PNGUoT's niche of high-end technical orientation in training future practicing applied economists to the PNG economy and the whole South Pacific Region.

Eligibility Criteria

The selection of students to the Master of AE Program will be made by the Economic Section of the School of Business, in accordance with one of the following extended eligibility requirements, approved by the Committee:

1. Degree with merit or Postgraduate Diploma of the University or of a tertiary institution approved by the Committee.

OR

2. Bachelor's degree of the University or of a tertiary institution approved by the Committee in a field of study appropriate to the course of advanced study proposed plus at least two years of professional experience in the relevant area of study.

OR

3. For direct entry to (with a Bachelor's degree) any course-based Master's program, the candidate must have an aggregated average of 65% marks from (first year to final year) or a cumulative GPA of 3.0 out of 5.

Fees:
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Master of Applied Economics

Master of Applied Economics Degree Program from PNGUoT Applied Economic Section in the School of Business – First Intake 2025



Figure 3. Head of School Dr. Adimuthu Ramasamy Addressing Staff and Students

Establishment of National Entrepreneurship and SME Innovation and Incubation Centre

In line with the Government of Papua New Guinea's (Gov.PNG) vision for 2030, the School of Business Studies has recently established the National Entrepreneurship and SME Innovation and Incubation Centre. This Centre is designed to play a key role in fostering the growth and development of Small and Medium Enterprises (SMEs) across Papua New Guinea. With the national focus on expanding the SME sector, the Centre aligns with the government's goals of increasing the number and impact of SMEs in the country.

The Centre has outlined four primary objectives to guide its operations:

- 1. SME Incubation** – Providing an environment conducive to the growth of nascent businesses by offering resources, mentorship, and infrastructure to help them thrive.
- 2. Innovation and Training** – Promoting innovation through targeted training programs designed to equip entrepreneurs with the skills and knowledge needed to stay competitive in a rapidly changing business environment.
- 3. Mentoring and Business Model Development** – Offering mentorship to entrepreneurs and guiding them in developing sustainable, effective business models that can adapt to market demands and challenges.
- 4. Short Course Training** – Providing specialized short courses aimed at addressing the immediate skills gap in the SME sector, particularly in areas such as business management, marketing, finance, and technology.

While the Centre is still in its initial stages of development, it is expected to roll out its full suite of programs soon, creating a valuable support system for entrepreneurs nationwide.

In addition to the National Entrepreneurship and SME Innovation and Incubation Centre, the School of Business has made significant strides in expanding its research capabilities. The School now houses a cutting-edge research centre dedicated to **Big-Data Analytics and Intelligent Systems**, further establishing itself as a leader in technological research in the region. Furthermore, the School is in the process of developing two additional research hubs:

- **PNG–China Centre of Business Studies**, aimed at fostering stronger business ties and collaborations between PNG and China.
- **PNG–Australia Centre of Governance and Policy Development**, designed to enhance research and collaboration in the field of governance and public policy.

The Centre is under the leadership of Professor Zhaohao Sun, a distinguished academic with extensive publications in the fields of business and technology. His leadership has been instrumental in enhancing the School's research profile and strengthening its position as a key player in both regional and international academic circles.

Future Programs Under Development

The School of Business is committed to continually expanding and enhancing its academic offerings to meet the evolving needs of students, industry, and the nation. As part of this commitment, the School of Business is in the process of developing a range of comprehensive postgraduate programs designed to provide advanced education and specialized training across key areas of business. Among these new offerings is an **Honours Program in Applied Economics**, which will allow students to pursue a deeper understanding of economic theory and its practical applications in addressing national and regional economic challenges.

Additionally, the School is working on introducing **Postgraduate Diplomas, Master's programs, and PhD programs in Accounting and Management**. These advanced programs are strategically designed to support Papua New Guinea's national development objectives, aligning with both the university's long-term goals and the broader aspirations of the Government of Papua New Guinea. The aim is to cultivate a highly skilled workforce capable of driving key aspects of the country's strategic vision, focusing on areas such as sustainable economic growth, good governance, and social progress.

The School of Business Studies future postgraduate offerings also aim to enhance PNG's regional and global competitiveness. Through these programs, students will be empowered to innovate, lead, and contribute to the entrepreneurial and business landscapes, both within Papua New Guinea and internationally. By equipping graduates with advanced knowledge, critical thinking skills, and practical experience, these programs will play a vital role in fostering innovation, entrepreneurship, and leadership across diverse sectors, thereby making a meaningful contribution to the region's socio-economic development.

Professional Academic Staff

The School of Business Studies is proud to be staffed by a highly dedicated and globally recognized team of academics, all of whom bring a wealth of knowledge and experience to the classroom. Our faculty members are not only experts in their respective fields but are also committed to fostering innovation and entrepreneurship in their teaching and research. This commitment ensures that students are exposed to the latest industry trends, business practices, and cutting-edge methodologies.

The academic staff of the School of Business hold advanced qualifications from renowned universities worldwide, including prestigious institutions in Australia, the USA, the UK, China, and other leading academic centres. This diverse academic background enables the faculty to offer a rich, multidisciplinary approach to business education, drawing from a wide range of international perspectives and best practices.

In addition to their expertise, the School of Business is focused on nurturing and developing the next generation of academic leaders in Papua New Guinea. We are committed to supporting young, national faculty members in pursuing their PhDs in their respective fields of specialization. By doing so, we aim to ensure that they are equipped to provide strong academic leadership and contribute to the growth and development of the School of Business Studies, the University, and the broader academic community. Through these efforts, the School of Business Studies is building a sustainable foundation for continued excellence in teaching, research, and innovation.

Research and Consultancies

The faculty at the School of Business is deeply committed to pursuing excellence across multiple dimensions of academic and professional engagement, including teaching, learning, research, consultancy, and community service. This commitment is underpinned by the strategic use of innovative and interactive blended learning technologies, which enhance the educational experience and ensure that students are well-prepared for the demands of the modern business world. These technologies enable a dynamic learning environment that combines traditional and digital methods, promoting greater student engagement and providing more flexible and accessible learning opportunities.

Our academic staff have a strong and established record in research, consistently producing high-quality work that contributes to both national and international scholarly conversations. They are committed to advancing competitive, impactful research that addresses relevant issues in business, technology, and economics, positioning the School of Business as a recognized leader in the global academic community.

For the past fifteen years, the School of Business has played a pivotal role in providing tailored, short-term training programs and consultancy services to both the private and public sectors. These initiatives have been integral in strengthening the link between academia and industry, with the School of Business Studies' expertise being applied to real-world challenges. The outreach partnership, now branded under the **National Entrepreneurship and SME Incubation and Innovation Centre**, continues to thrive, further extending the School of Business' impact and reputation in the broader business community.

In addition to its long-standing consultancy services, the School of Business Studies regularly offers a variety of short courses in collaboration with industry partners during semester breaks. These courses are designed to address specific skill gaps in the workforce, providing professionals with the opportunity to upskill and remain competitive in a rapidly evolving business landscape. This ongoing partnership with industry not only enriches the learning experience for students but also reinforces the School of Business Studies role as a key driver of innovation and practical business knowledge in the region.

Student Learning Facilities

The school has been committed to providing our students with excellent educational opportunities that utilizes ICT technology and equipment. The **BBIT Lab recently received 48 new computers, along with a refurbished partition**, enhancing student learning experiences.



Figure 4. The Calc Lab with The Installation of 48 New Desktops for Students to Use.

Benchmarking and Accreditation

The School of Business Studies is actively negotiating collaborations with internal and international partners, particularly with the University of New South Wales and Queensland University of Technology, to advance benchmarking and accreditation efforts.

Graduation

In 2024, School of Business Studies, Taraka campus graduated a total of 148 students (Accounting 75, Applied Economics 43, Information Technology 13, and Business Management 17) in the four programs offered.



Students from the School of Business Studies Undergraduate Class of 2024

Recruitment of Senior Academic Staff

Several senior expatriate academics, including three professors, were recently interviewed, and recommendations were made to the staffing committee. One of the professors is on the ground now. Two more are expected to join soon.



SCHOOL OF COMMUNICATION AND DEVELOPMENT STUDIES

Teaching and Learning Activities of the School

The teaching and learning activities of the School of Communication and Development Studies (operating within the Faculty of Humanities) ran smoothly throughout 2024, with the Google Classroom Learning Management System continuing to have a positive impact on educators and students embracing a hybrid model of instruction.

- Under this model, hybrid teaching has become the standard mode of preparation and delivery of lessons, with Google Classroom being the leading platform used by the teaching staff for both undergraduate and postgraduate programs, supplementing small-group face-to-face classes and seminars arranged by individual staff as appropriate.
- Teaching capacity in the **School's Postgraduate program** has been somewhat affected due to senior staff shortages over the past years, which has been partly alleviated by the onboarding of **Professor Madan Mohan Laddunuri** in the disciplinary area of Sociology. Another academic staff member, due to arrive in 2025, is **Senior Lecturer Dr. Clara B. Reshma** in the EAP area. With these additions, we aim to enhance and expand our postgraduate offerings in 2025 and 2026.
- The School had continued its **external teaching** activities at the **SUSU campus** with the completion and delivery of course modules for the second-year students in the Diploma program. The first graduation took place in December 2020 when ten (10) pioneer students received their Diploma in Communication and Development Studies. The graduation for the second cohort (2021) was deferred due to COVID-19 restrictions. Nevertheless, they eventually graduated with the main campus students at the Taraka campus in June 2022: that was the first time students from the SUSU campus had to graduate at the main campus. The third cohort graduated in 2023.
- The SCDS continued (with three other PNGUoT academic schools) to pilot the **Online Education Programme (OLEP)**, begun in 2022, for both School Leavers and Non-School Leavers across the entire country. Staff teaching a subject in the respective semesters of years one to three produced their respective course modules. The OLEP is now in its second year of service. In 2025, the BACD Degree program will then be **fully** offered online.

The **Undergraduate Curriculum Review** continued from 2023 in correlation with the current Benchmarking Program. Following our Curriculum Review and Industry Course Advisory Meeting, the School will look to diversify our degree programs. We will **consider offering three (3) degree programs**:

- A. Elevate our revised undergraduate curriculum – NQF8 (degree with honours)
- B. Diversify our degree program. The Three-degree programs are:
 1. Degree in Development Studies (International Relations, Community Development, Environment, SDGs, Culture, Language).
 2. Degree in Communication & Journalism, and
 3. Degree in Conflict Resolution & Peace.

Graduate Feedback from Industry Partners and Stakeholders

Our industrial partners continue to make significant contributions to enhancing the quality, employability, and industry relevance of our program. This collaboration benefits both students and the academic institution. Graduates of SCDS have been coming on board to participate in the School's Industrial (Professional) Training field attachment programs. They have been representing their employers by being involved in the designing of fieldwork plans that are tailored for our students' training needs.

George Wrondimi and **John Milba** facilitated an Evangelical Lutheran Church (ELC) Management Training session on Management Leadership Skills (from June 25-26, 2024). A consultation agreement was signed.

Consultation was undertaken with the National Gaming Control Board (NGCB) on the development of the draft of the 3rd MOU to commence in 2025 - 2029 for our BACD/4 Professional Work Experience (PWE).

SCDS and PNGUoT currently have two (2) MOUs for our BACD/4 students' Professional Work Experience (PWE) with the National Gaming Control Board (NGCB) and the Mineral Resources Development Company (MRDC).

Short Course on Workplace Safety & Risk Management

Demand for the School's short course on Workplace Safety and Risk Management has continued to grow. The first training commenced in early December 2021, with 29 participants graduating after completing two weeks of training and receiving their Levels One to Three Certificates. Due to high demand, the short course will continue regularly.

Postgraduate Research Relevant to Producing Employable Graduates

Both our final year (4th year) undergraduate and postgraduate (Masters and PhD) students are required to complete research projects to present seminars and submit reports, as part of their respective study programs. In 2024, the School and its academics sustained twelve (12) postgraduate degree candidates, and fifty-four (54) undergraduate graduating candidates.

Highlights of Outreach and Research Activities by Academic Staff

Highlights of staff outreach and research activities for 2024 included:

Ongoing Community Partnership Projects

Dr Rachel Aisoli-Orake, as **HoS**, travelled to Chongqing Normal University (CNU) for the 70th Anniversary with the PNGUoT SEMT. Whilst there, the HoS and the PNGUoT SEMT consulted the International College of Chinese Language & Culture (ICCLC), and the HoS made a presentation, and **proposed a "Partnership with CNU ICCLC"**:

- i. In the revised PNGUoT BACD Curriculum – Considered the Chinese Language as one of the elective subjects.
- ii. Request CNU ICCLC to consider this proposition.

Material in sections 4 and 5 are derived from "School of Communication and Development Studies Research Report 2024."

- iii. Assist PNGUoT School of CDS – Chinese Language curriculum & its Chinese language teachers.
- iv. CNU ICCLC to consider other areas of collaboration.

Starza Paul engaged as a research partner with the University of Canberra and ACIAR on a 'Sago & Food Security' project in Western Province - an ongoing project. He also conducted research with other researchers from PNGUoT on arms smuggling and tribal warfare in Enga and the Highlands, an ongoing project funded by PNGUoT. He completed a research project on crime and safety in Morobe in collaboration with Australia National University.

Joshua Kuri, **George Wrondimi**, and **Jack Yaro** led PNGUoT & RAIL in an on-site OHSRM Training. Under an MoU, The Papua New Guinea University of Technology (PNGUoT) and the Ramu Agri-Industries Limited (RAIL) had for the first time witnessed a positive breakthrough in bringing Occupational Health, Safety and Risk Management Training (OHSRM) to the Industry's doorsteps.

Dr Rachel Aisoli-Orake, **John Milba**, **Joel Sefo**, and **Imelda Ambelye** participated in a CDSSA Industrial Talk Program with the theme: "To Inspire aspirations by sharing experiences from different fields of C4D" on 27 July.

Dr Rachel Aisoli-Orake, **John Milba** and **Ian Yengki**, along with six (6) BACD/3 students, participated in the "Smart Climate Change Farming" (irrigation) with the University of Goroka, PNGUoT and the National Agriculture Research Institute (NRI) at Patep community of the Bulolo District. A documentary video was produced by the University of Goroka's CSM, PNGUoT. The SCDS wrote the Community Profile of the project.

In concert with **Professor Dr. habil. Silva Florea** of LBUS, **Professor Eric Gilder** taught in the online CIDASE Master's program in Sino-European Intercultural and Business Communication, which is done under the organizational umbrella of the Confucius Institute there.

In the area of scholarly output in 2024, our academic staff published four (4) peer-reviewed articles and book chapters, made four (4) project and scholarly presentations, and attended three (3) international conferences. Two of our academic staff, **Dr Aisoli-Orake** and **Imelda Ambelye**, won a 2024 Open Education Global Award of Excellence, for collaborating with other PNGUoT colleagues on the 2023 publication: "Successful Higher Degree Researcher Pathways in a Developing Country – Papua New Guinea," in S. Gasson, J. Blacker, I. Stoodley, A. Winter & C. Bruce (Eds.). *Confident supervisors: creating independent researchers*. James Cook University (e-Book).
<https://jcu.pressbooks.pub/confidentsupervisors>

Wilma Langa and **Sheryl Makara** worked on completing the final reports of their PhD theses for examination, while Imelda Ambelye worked on corrections to her thesis based on the Examiners' Reports.

International Benchmarking of Undergraduate Academic Programme

In 2021, the School undertook an international benchmarking exercise of its revised undergraduate academic programme, led by Professor Dr *Habil.* Silvia Florea of the Lucian Blaga University of Romania, and Professor Gilder of SCDS, beginning with a benchmarking study by Professor Florea in 2022, and continuing with four planned modules of hybrid implementation: (1) Curriculum Review, (2) Faculty Development, (3) Student Engagement and Development, and (4) Infrastructure Development. Under this agreement, Professor Florea and the School have completed the first two of the four planned modules in 2024. (We plan to complete the third module by November 2025 and the fourth by August 2026).

FACULTY OF NATURAL RESOURCES





SCHOOL OF AGRICULTURE

The School of Agriculture offers a science-based agriculture curriculum for undergraduate and post graduate degree programs, in addition to conducting basic and applied agricultural research and disseminating relevant information to the community. The school's functions are guided by a vision: *to be a premier agricultural school providing high-quality agricultural education to empower graduates to be innovative scientists, extensionists, entrepreneurs, and policymakers for sustainable agriculture and community development.*

Academic Programs

The School offers two undergraduate programs. The Bachelor of Science in Agriculture [B.Sc.(Ag)], a full-time, on-campus, four-year study program, while the Bachelor of Agriculture and Rural Development (B.Ag. & R.D.) is a flexible and distance-mode administered program. The school also offers three postgraduate degree programs, the Master of Science in Agriculture [M.Sc.(Ag)], Master of Philosophy (M.Phil.), and Doctor of Philosophy (PhD). The M.Sc.(Ag) program is a combination of coursework and research, while PhD and M.Phil study programs are research only degrees. The total number of students enrolled in the B.Sc.(Ag) and B.Ag. & R.D. programs in 2024 were 234, with 192 and 42 students, respectively. In 2024, 40 and 16 of 2023 years graduated with B.Sc.(Ag.) and B.Ag. & R.D., respectively. The total postgraduate enrolment was 35 students, of which 10 were in PhD, 10 in M. Phil., and 15 in M.Sc. (Ag) programs. In 2024, 3 students graduated with MPhil (Ag) and 6 students graduated with M.Sc.(Ag). The curricula of our programs are regularly reviewed to ensure the delivery of up-to-date and relevant information to students.

Staffing and Infrastructure

The School has 17 qualified academic staff (14 PhDs, 2 MPhils and 1 MSc), together with a wealth of teaching experience. Staff members use a variety of Learning Management Systems (LMS) for both classroom and distance-mode teaching, and the school offers a robust curriculum. All classrooms are equipped with audio-visual aids to facilitate the effective delivery of classroom teaching. The annual procurement of consumables for teaching, research, and maintenance of lab equipment has ensured sufficient skills development in students through lab sessions.

In preparation for program benchmarking in 2023, labs, lecture rooms, staff offices, and farm infrastructure underwent renovations, and some are ongoing.

In 2024, the first phase of benchmarking for the School's program was completed, and the second phase will follow in 2025. Vacant positions for two academics and one technical staff were advertised and were filled in early 2024.

Research Activities

Research in the School is undertaken by the third-year students, postgraduate students, and academic staff and addresses issues concerning the broad subject categories, including crop sciences, animal sciences, economics and management, extension and development, and farm mechanization and postharvest technology. In 2024, 52 students undertook supervised research for the subjects, AG312 and AG322. Research topics of the postgraduate students are highly relevant to meet the requirements of the stakeholders. Several postgraduates are jointly supervised by staff from research institutions and commodity industries, e.g., National Agriculture Research Institute (NARI), New Britain Palm Oil Limited (NBPOL), Ramu-Agri Industries Ltd (RAIL), and Oil Palm Research Association (OPRA).





A total of 35 postgraduate students were involved in research as part-fulfilment of their respective levels of study. The School staff members, solely or in collaboration with postgraduate students, published 6 peer reviewed journal articles in 2024. Academics also jointly presented 10 conference papers.

Two staff members, Mr. Nick Kewa and Mr. Timothy Bafiec, enrolled in 2024 to pursue doctorate studies, with research funds made available through the CSIRO project, approved in 2023. Colleague academics, Professor P. Manus and Dr. R. Rao, are respectively involved as principal supervisors to the candidate. This research is managed by the ERMIC, PNGUoT. The Unitech Biotech Centre (UBC) continues to conduct research in collaboration with the FPDA for micropropagation of potato.

Industrial Relationship

The School considers active academic and professional relationships with external institutions and industries as a vital linkage that would facilitate benefits on knowledge, skills, and services. The School continues to work in partnership with several national and international organizations, such as the Australian Council of Deans of Agriculture (ACDA), Support for Rural Entrepreneurship, Investment and Trade in Papua New Guinea (STREIT), Outspan PNG (OLAM), ACIAR/CSIRO, GrowPNG Ltd, Innovative Agro Industries (IAI), and Trukai Rice Industries. The School's linkages to the external national organizations is also actively maintained through the engagement of our students who go on an annual Work Integrated Learning (WIL). In 2024, students were engaged by more than ten organizations throughout PNG to complete WIL.

Community Engagement

For community engagements, SPISARD is the conduit through which the department channels its outreach activities. Community-based livelihood enhancing activities were conducted in provinces such as Oro, Central, Eastern Highlands, East Sepik, Jiwaka, Western Highlands and Southern Highlands. A detailed annual report from SPISARD is generally submitted to the office of the Deputy Vice Chancellor through the Head of Agriculture.

In 2023, the School continued to implement the instruments of a five-year MOU signed in 2022 between PNGUoT and Trukai Rice Industries. Through this agreement, several established and prospecting rice farmers from throughout PNG participated in two training sessions at the University's Taraka Campus. This partnership continues to facilitate the transfer of knowledge, skills and technology to participating individuals, groups or organizations.

Notable Highlights

- There has been increased commercial activity at the Agriculture Farm. The Farm entered into a contract with the University students' mess to supply livestock meat and crop produce. The Farm began supplying the mess with 1,000 dressed broilers per week in June 2023 and continued to do so in 2024.
- In 2023, in preparation for program benchmarking, the school renovated its laboratories, lecture rooms, postgraduate study room, staff offices and the reception area. In 2024, the first phase of the benchmarking was completed. The second phase is scheduled for 2025.
- One expatriate academic staff member was successfully recruited from Nigeria in 2024.
- As part of the restructuring, Professor Macquin Maino was elevated in 2024 and assumed the Dean of the Faculty of Natural Resources in 2025.
- Professor Peter Manus was appointed as the new Head of the School of Agriculture in 2024 and assumed office in 2025.
- Professor Rao was appointed acting Dean of the Faculty of Postgraduate Studies, Research and Innovation assumed office in 2025.



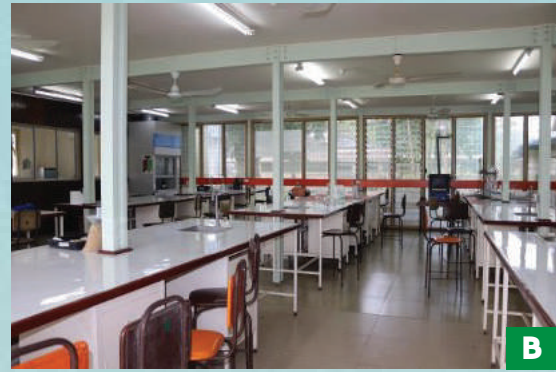


Figure 1: A & B. Renovated laboratories 1 & 2; C. Sample of renovated classroom showing a mounted overhead projector; D. Renovated postgraduate study room; E. Chicken dressing process; F. Dressed chicken ready for delivery to the students' mess.



SCHOOL OF FORESTRY

Introduction

The School of Forestry has been training professional foresters for Papua New Guinea (PNG) and the Pacific region at the Bachelor's Degree level since 1972, with the first graduates in 1976. Most graduates are currently employed as scientists, administrators, and managers in various government agencies and private sectors, including non-governmental organisations (NGOs) and some community-based organisations (CBOs) within the nation and the wider Asia Pacific Region. Some of the graduates have become entrepreneurs within various communities and serve as community leaders in different roles throughout the Pacific.

Vision

The vision for the School of Forestry (SoF) is to strive for improved training, teaching and high research standards through international accreditation. The SoF aims to tailor the curriculum to the regional and global job market requirements.

Mission

The School of Forestry's mission is to produce professional men and women with scientific, technical, management, and production skills with the knowledge needed to manage Papua New Guinea's forest resources. Its teaching and training philosophy is to have a well-managed forest as an asset for the local, national, and regional economies, benefiting present and future generations.

Curriculum Development

The SoF is currently implementing the revised curriculum, which features four subjects per semester, condensed from six to seven subjects previously implemented. The year 2024 is the sixth year of implementing the four subjects per semester within the teaching allocation of six (6) hours per week. The review was conducted to meet the changing needs of higher teaching and learning and to benchmark with overseas universities in the region regarding international accreditation. Its benchmarking committee, led by Professor Hadi, successfully completed the process.

Achievements

Some milestone achievements in 2024 are:

- The graduation of the second batch of students under the reviewed curriculum of four subjects per semester
- The signing of the Memorandum of Understanding (MoU) with the Papua New Guinea Forest Industries Association Inc. (PNGFIA), a major stakeholder in forestry education and industry.
- The continued implementation of the Bachelor of Forest Resource Management (BFRM) degree programme at the Bulolo University College (BUC) with the second intake of students.
- Twenty-nine students graduated from the forestry science degree program in April 2024 (Bachelor of Science in Forestry – 29 students and the second last group of students in the Diploma in Forestry – 20 students).

These achievements would not have been possible without the efforts of our staff and students, as well as the support from all partners and stakeholders, both within and outside the university.



The signing of the MoU between PNG University of Technology's Vice Chancellor, Professor Ora Renagi, OL, and PNG Forest Industries Association Inc. was witnessed by the Head of School of Forestry, staff of the two Forestry campuses and student representatives.

Undergraduate courses and revised curriculum

The SoF comprises the Taraka campus, Bulolo University College (BUC) (Bulolo campus), which offers both Bachelor's degree programmes, and the Timber and Forestry Training College (Bumbu Campus), offering the only Diploma in Wood Processing program. Taraka campus offers the Bachelor of Science in Forestry (BScF), and the Bulolo campus offers the Bachelor of Forest Resource Management (BFRM). The BScF program currently has second-year students attending BUC, while the BFRM has all its registered students at the Bulolo campus. The courses are four-year degree programmes that cover subjects such as forest management, environmental protection, and multi-purpose forest resource surveys, including wood technology and forest-people interactions. All coursework is complemented with field work components in the surrounding forest areas, forest industries and communities within Morobe Province. Both degree programs require students to complete 60 days of FR425 Professional Work Experience (PWE), arranged by the PWE Coordinator in collaboration with stakeholders, based on the Memorandum of Understanding (MoU) or their own initiatives during the holidays, to qualify for graduation.

Postgraduate Studies

The postgraduate programs consist of Master of Philosophy (MPhil) and Philosophical Doctorate (PhD) in Forestry for two years (MPhil) and three years (PhD). PhD studies are entirely dependent on the availability of supervisors. The SoF currently has three PhD students (Hayden Wagia [submitted his thesis], Philip Ouyomb Topaiman [made his candidacy defence], and Russel Tarutia [withdrew] and five MPhil students (Ben Ruli [never re-registered], Cassey Uvau [graduated], June Mandawali [graduated], Ivy Kiele [finalising thesis], and Priscilla Menin [finalising thesis]). Two of our four MPhil students have just graduated, and two are finalising their theses for submission to the post-graduate faculty by the end of 2024, which will be examined. There are interests from potential students to undertake postgraduate studies. Still, the unavailability of professorial supervisors in specific fields of expertise has been a major barrier to enrolling students. Our average number of students graduating at the postgraduate level has been four since 2014.

The School of Forestry (SoF) Staff and Training

The SoF has 38 full-time faculty members teaching on the three campuses, while two faculty members (Mr Edwin and Mr Warra) are currently finalising their PhD theses and will be completing them at the end of July 2025. Meanwhile, two of SoF's non-academic staff members at the technical level (Ms. Christine Pokana, Mr. Israel Penu) have successfully received research funding support to conduct their field data collection for their MPhil studies. They are officially on track in the second year of their MPhil program.

Staff movement

New Secretarial staff – Ms Serah Kum (started in May 2024) and Mrs Donna Yep (Started in June 2024), while Dr Diaiti Zure has accepted a Post-doc offer in Taiwan and has left teaching duties at the Taraka Campus. The SoF also has a new TFTC Principal who started in September 2024.

Laboratory facilities

The primary function of this laboratory is sieving, weighing, and drying of soils and plant materials. The laboratory supports undergraduates and postgraduates conducting research and projects on Soil analysis. Refurbishment of the laboratory began last year (2024) with the installation of window curtains, and an air conditioning unit is yet to be purchased and installed.



Instrument laboratory

Most of the laboratory equipment is kept in the instruments laboratory. The room also facilitates the preparation of materials/reagents for practical lab classes. Microscopes are the main piece of equipment used by the first-year Forestry and Applied Sciences students in the Plant & Animal Biology practical sessions. Due to the increased number of first-year students, the school needs to purchase more microscopes to replace the old ones, which have only low objective lenses. This was one of the tasks included in the HOF's Work Plan 2022/23 to upgrade lab equipment, and so far, five new microscopes have been purchased.

Research, consultancy and stakeholder engagements

The SoF's engagement in research, consultancy and community development projects had concentrated on the ongoing collaborations with stakeholders. The SoF recognises the difficulties in organising field trips and consultations, as well as ensuring student involvement. In response, the SoF is developing a comprehensive policy framework to address these concerns, offering valuable guidance for faculty and students in their research endeavours. By prioritising mentorship and adhering to ethical research principles, the SoF is committed to fostering a productive environment that enables the production of exceptional research results.

Professor Hadi and Associate Professor Yosi conduct active research work. Associate Professor Yosi on the resistance of polystyrene impregnated and preserved four tropical woods exposed to subterranean termites in Papua New Guinea. This was joint research among the PNG University of Technology, the PNG Forest Research Institute, IPB University Indonesia, and the Research Centre for Biomass and Bioproducts, National Research and Innovation Agency (BRIN) Indonesia.

The SoF also maintains a regular potted plant business for beautification and hire purposes with Boroko Motors in Lae, and is looking for other stakeholders' interests for partnership. Plants are raised and cared for at the SoF nursery yard.



Our Insect Farming and Trading Agency (IFTA) has established and maintained networks with communities nationwide to promote community partnership programs through insect farming, buying, and selling activities. IFTA currently has existing farmers from Simbu, Jiwaka, East New Britain, Morobe and Oro Provinces. In 2024, four farmers brought in their insect collection for an overseas customer's request and frame-making. There are interests expressed from collectors from Hoskins in Kimbe and Madang. IFTA needs to reach out to other provinces apart from the mentioned places to engage more farmers and collectors.



In 2024, a total of five (5x) exports were done to Australia, Switzerland, France, the USA and Italy. Domestically, mounted butterfly sales were conducted in frames and glass perspex of various sizes (large, medium, and small) to interested customers. All in all, with the IFTA ongoing challenges, the operation is functional at a minimum level through continuous insect exports, sales of butterfly frames and glass perspex, giving little awareness and training to interested collectors, collaborating with NGO, government bodies or agencies and meeting CEPA's requirements.

The SoF has been encouraging students under the new revised curriculum to get engaged with various agencies in the environment and forestry sector during the festive holidays as part of their industrial experience. Favourable responses were received from our main stakeholders, including PNGFA, PNG Forest Products Ltd, and others around the country, to facilitate the 60 days of professional work experience (PWE) for our students.

Congratulatory and Complimentary Messages

The School of Forestry acknowledges the successful completion of Dr Diati's PhD study. The SoF also wishes to congratulate our staff, Mr. Israel Penu and Ms. Christine Pokana, for their successful application to receive their research grants to complete their field research work. Finally, we would like to extend our appreciation and gratitude to all our stakeholders and partners who have supported us in completing the 2024 academic year.



FACULTY OF POSTGRADUATE STUDIES, RESEARCH AND INNOVATION





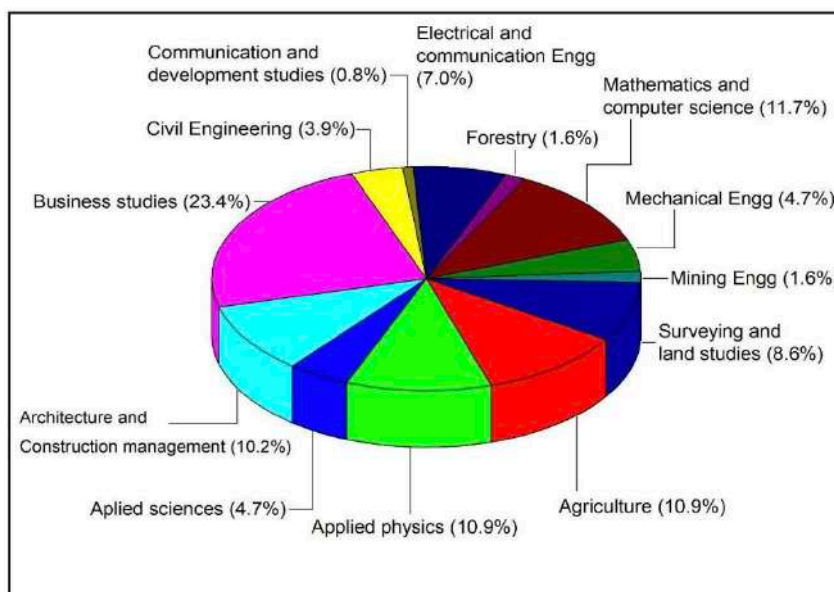
Faculty of Postgraduate Studies, Research and Innovation

FACULTY OF POSTGRADUATE STUDIES, RESEARCH AND INNOVATION

The Faculty of Postgraduate Studies, Research and Innovation was led by Acting Dean Professor Gariba Danbaro, supported by two administrative staff members: Ms. Pamela Dubaba, Senior Assistant Registrar, and Mr. Terence Kaupa, Assistant Administrative Officer.

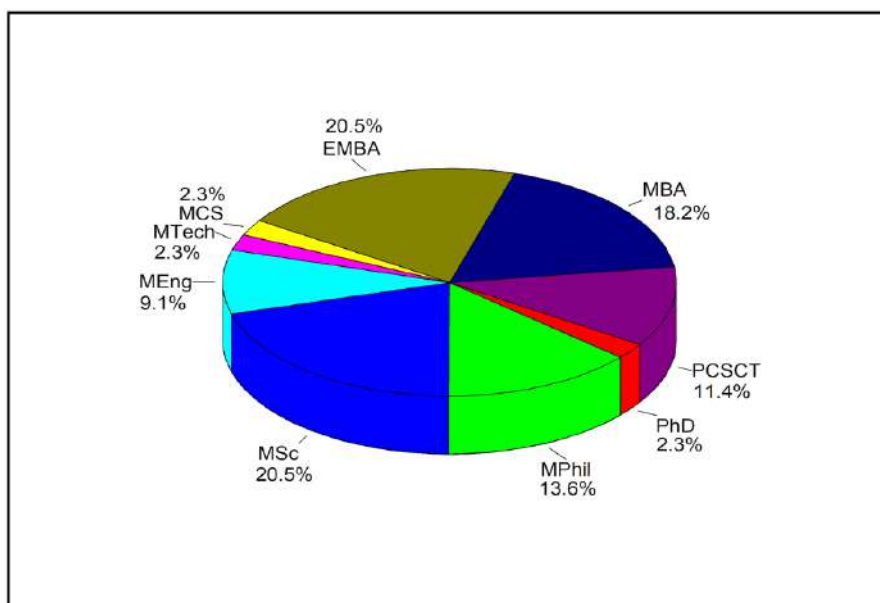
Postgraduate Admissions

The faculty experienced significant growth in enrollment numbers in 2024. An orientation and registration program was organized to support the incoming postgraduate students. Enrollment for the first semester of 2024 reached 112 students, while the second semester saw 29 enrollments. The breakdown of admission data is shown in the figure below. The School of Business Studies accounted for the largest share of admissions (23.4%), followed by the School of Mathematics and Computer Science (11.7%), and both Applied Physics and Agriculture at 10.9% each. Among the total students, 35 were female and 93 were male.



Graduands Data

A total of 44 postgraduate students completed their programs in 2024. Among them, the sole PhD graduate was from the School of Electrical and Communications Engineering. The MSc and EMBA programs were the most successful, each graduating with nine students. Of the total graduates, 35 were male and nine were female. The course-wise distribution of graduates is shown in the Figure below



Graduate Assistantship Program

The faculty's operations continued to support high-achieving students through the Graduate Assistantship Program (GAP) scholarship, which helps alleviate the burden of tuition fees, accommodation, and other expenses associated with postgraduate education. This initiative aims to attract academically outstanding students to pursue higher degrees locally, thereby enhancing the university's academic reputation and commitment to excellence. In 2024, a total of 18 students were supported under the GAP scheme.

Higher Education Loan Program (HELP) Support for PG Studies

The Faculty of Postgraduate Studies, Research and Innovation facilitated the Higher Education Loan Program (HELP), offered by DHERST, to support postgraduate students. This initiative contributes to the development of Papua New Guinea's higher and technical education sector, promoting economic growth, social development, and national building. In 2024, a total of 40 post graduate students accessed the HELP facility, as presented below.

	Males	Females	Total
PhD	3	1	4
MPhil	8	1	9
MSc	6	2	8
MSc	2	0	2
MEng	4	0	4
EMBA	5	6	11
MBA	2	0	2
TOTAL	30	10	40

International PG Students

Faculty actively engaged with overseas partner institutions and hosted students under the Queen Elizabeth Commonwealth Scholarship (QECS). In 2024, two QECS scholars (Esther Eze and Joshua Oluwatobi) completed their MSc in Agriculture studies in the School of Agriculture. One new QECS scholar, Daniel Musyoki Mwangangi, was accepted in 2024 to commence in 2025 with the School of Civil Engineering.



Weekly Research Seminars

Faculty facilitated the weekly seminars to help faculty, researchers, and postgraduate students share ideas, research, and updates. They encourage collaboration, improve research skills, and keep everyone informed about current work. Eighteen staff/student seminars were organized in 2024.

Research and Conference Funding

The Faculty, through the Postgraduate Studies Research and Innovation Committee, approved K391,023.25 for staff and student research funding. Besides, a funding of K170,417.99 was approved for academic staff to attend national and international conferences. The total spending approval on research funding and conference attendance was K561,441.24 as outlined in the table below.

2024 Research and Conference Funding in PGK			
Meeting No	Research Funding	Conference Funding	Total
PSR&IC Meeting No. 15	15, 000.00		15, 000.00
PSR&IC Meeting No. 16	58,950.40	61,410.09	120,360.49
PSR&IC Meeting No. 17	81,657.15	51,790.00	133, 447.15
PSR&IC Meeting No. 18	235,415.70	57,217.90	212,934.18
Total	391,023.25	170, 417.99	561,441.24
Grand Total	561,441.24		

7th National Science and Technology Conference

In 2024, the Papua New Guinea University of Technology hosted the 7th Science and Technology Conference at its Taraka Campus from July 1–4. More than 125 papers were presented by national and international participants, covering a wide range of disciplines including science, technology, humanities, the built environment, law and justice, medicine, and more.

The Interdisciplinary Journal of Papua New Guinea University of Technology

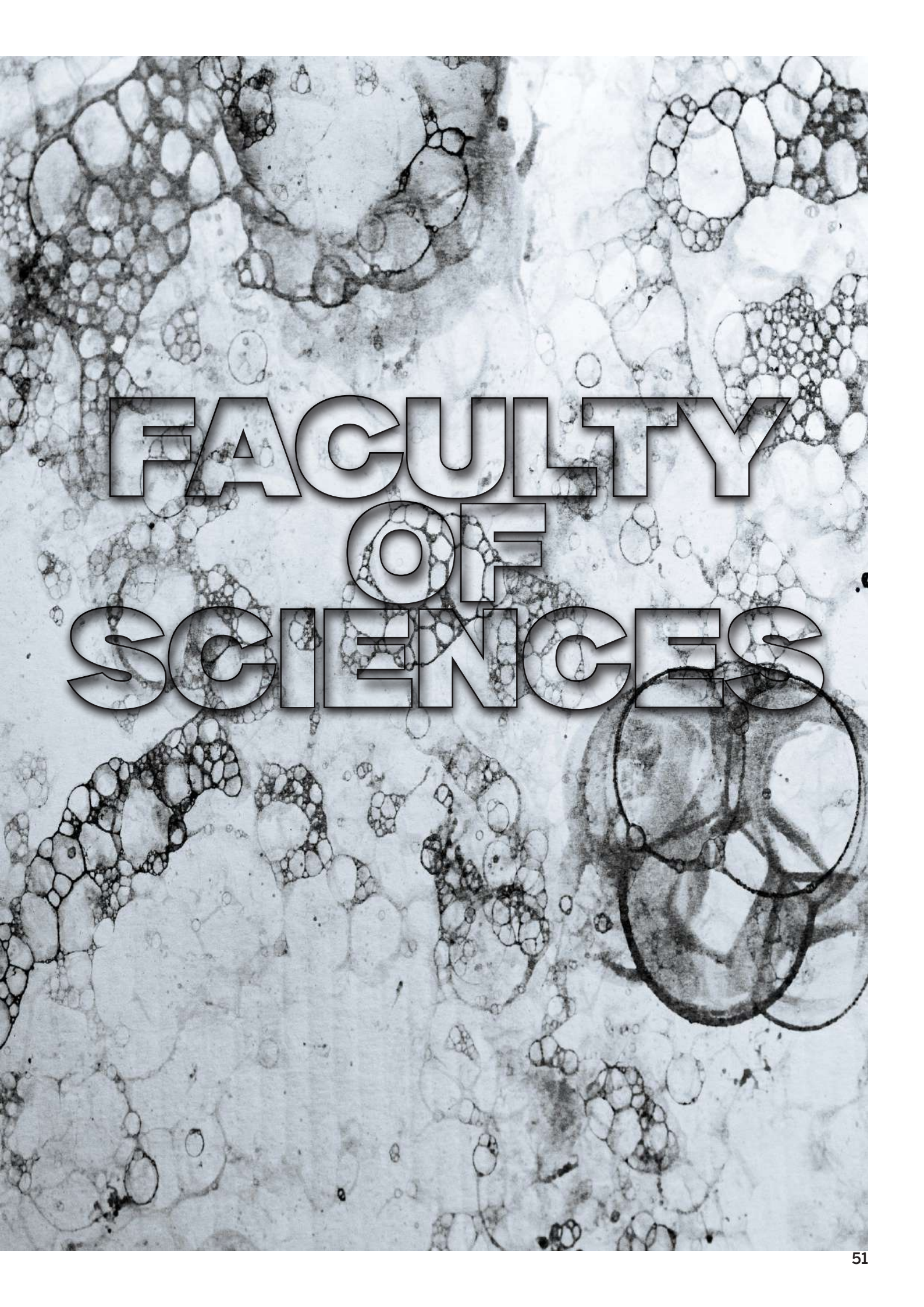
In 2024, *The Interdisciplinary Journal of Papua New Guinea University of Technology* published two issues of its inaugural volume. Issue 1 featured 11 peer-reviewed articles, while Issue 2 included 7 articles.

Annual Student Seminar

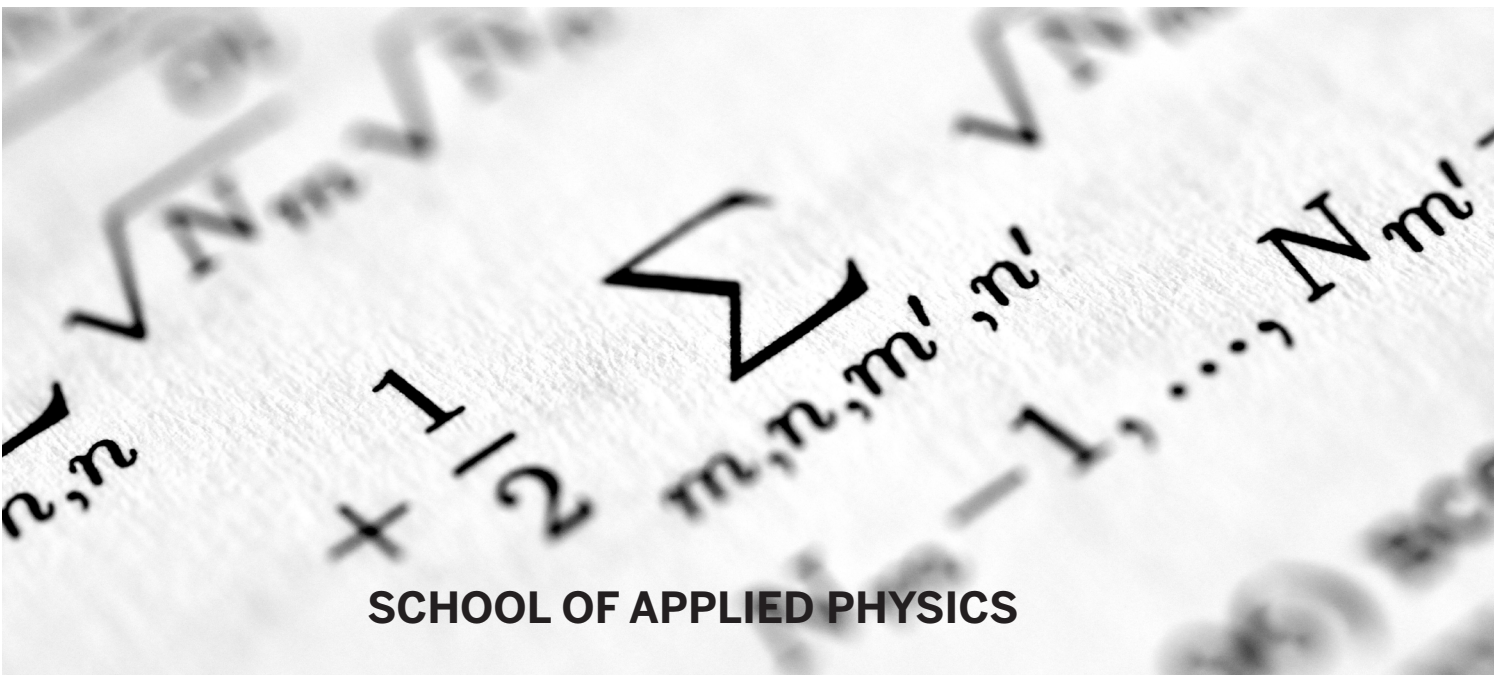
The annual student research seminar was held on October 1 and 2. A total of 37 postgraduate students presented their research findings to the University community and industry experts, and leaders. Research leaders from the National Research chaired the presentation sessions Institute, the PNG Science and Technology Secretariat, the New Guinea Binatang Research Center in Madang, and the National Agricultural Research Institute.

Staff/ Student Publications

The academic staff and postgraduate students published their extensive research findings in various formats, including journal articles in reputable professional journals, conference, and seminar papers, books, and book chapters. In 2024, the total scientific output included more than 130 journal articles, 12 books, 25 book chapters, 67 conference/seminar papers, and one granted patent.

A black and white micrograph of plant tissue, likely a cross-section of a leaf or stem. The image shows various cellular structures, including large, rounded cells with thick walls, and smaller, more irregular cells. The overall texture is granular and complex, with many small, dark, circular or oval structures scattered throughout. The text "FACULTY OF SCIENCES" is overlaid in the center in a large, bold, sans-serif font with a drop shadow effect.

FACULTY OF SCIENCES



SCHOOL OF APPLIED PHYSICS

1.0 Introduction

The School of Applied Physics was established in 1965 as a service department based at Waigani, Port Moresby. Between 1971 and 1972, it was transferred to the Taraka Campus in Lae, Morobe Province, where it remains today, alongside other Engineering and Science Departments. It used to be relatively small compared to other academic departments, as it is only a service course. Today, the number of intakes for both undergraduate and postgraduate students is equal to that of other departments.

The Strategic Plan for the School of Applied Physics at PNG University of Technology is strategically aligned with the vision, mission, and core values of the University's Vision 2030 and the Government of Papua New Guinea's Vision 2050. To meet the high standards in producing quality graduates, the school is working towards developing human resources capacity and upgrading existing facilities to an international level through institutional accreditation. The academic activities of the Department are expected to produce graduates of international standing who are competent in the local and overseas markets. The staff and students are expected to feel satisfied with the level of academic achievements in all areas of activity within the department and the University as a whole.

The graduates are to be future-focused, imparted with a systematic approach in analytical and problem-solving skills in the fields of applied Physics, Instrumentation, and Biomedical Engineering. They will serve the country's needs and develop creativity through entrepreneurial skills, enabling them to create wealth and contribute to poverty alleviation. The Department is working toward developing dynamic study programs with research, innovation and commercial activities components to increase the graduates' marketability within the country and overseas.

2.0 Employability

The Applied Physics graduates are working all over the country and overseas as well. They are employed in specialties related to Physics with electronics and instrumentation. Some work in the telecommunication industry, the Airline industry, education, tertiary institutions, the mining industry, PNG Power, and many are employed in the manufacturing industry in process control and instrumentation. Many past graduates have acquired skills and knowledge and are now engaged in private consultancy work, creating additional job opportunities and industrial training pathways for our undergraduates. The feedback from our past graduates' performance in the industry is very encouraging, with demand for our graduates getting absorbed by the industry, government departments, education and other universities, with some establishing private entrepreneurship. The new Biomedical Engineering graduates will find employment in the National Health sector. All pioneers of this program were recruited by the National Department of Health (NDoH) to serve in their respective general hospitals across the country, focusing on healthcare sustainability.

3.0 Postgraduate Courses

The School of Applied Physics currently offers five Postgraduate programs: a research-based Doctor of Philosophy (PhD), a Master of Philosophy (MPhil), a course-based Master of Science (MSc) in Electronics and Instrumentation, and Master of Technology (MTech) in Exploration Geophysics, and the recently introduced Masters in Renewable Energy Access and Climate Change. There is enormous interest among the students in the School's Postgraduate Program. In 2024, three (3) students were progressing well with their Doctoral degree (PhD) studies. Two (2) are staff members, and one (1) is the first female PhD student in AP.

The school currently has 3 MSc, 2 MPhil, 2 MTech, and 2 PhD continuing PG students.

4.0 Graduates 2024

A total of 25 students (23 males, 2 females) in the undergraduate course of Applied Physics with Electronics and Instrumentation, and 12 (7 males, 5 females) in Biomedical Engineering graduated on April 11, 2025.

5.0 Postgraduate Students Graduated in 2024

Two PG students graduated in 2025, one female with a PhD in Applied Physics and one male with an MSc in Applied Physics.

6.0 Accreditation of BSAP Courses

The School initiated the process of benchmarking in 2023; however, the success rate is poor. The school's committee has been established, and progress is being made in collaboration with Macquarie University in Sydney for benchmarking purposes. It is expected that the benchmarking program will be successfully completed by the end of 2025.

7.0 Staff Training and Promotion

The Department is focusing on the future. We have recruited well in 2023 with all young technical officers who are degree holders and four young academics being appointed from our postgraduate program. We have also recruited a young admin officer/ receptionist and promoted a technical staff member who has a Master's Degree to an Academic position. The process of getting the young academics into the PhD Program here at the School and overseas has started on an excellent note, with one Successful applicant with the Chinese Government Scholarship and is now in China for PhD studies. The recommendations of our young academics for an award of various international donor-funded scholarships for PG Studies overseas are ongoing. Two members of our staff are on PhD studies, and we hope that by the end of this year, 2025, both will complete their PhD. The staff training plan for 2020-2024 was edited and submitted to the Human Resources office for guidance and implementation.

In 2024, one academic staff member got promoted to Professor, three technical staff were promoted to Technical Officer II, and our Senior Secretary was promoted to Senior Secretary



Car Park upgrade and west wing of the Radiological Laboratory

Installation of Solar Panels on the roof top of AP Building

This project has taken longer than expected and gone beyond the expected time frame, which is the end of 2023, and now into 2025. The first stage of the project is completed, and now we are in the second stage, which is procurement and purchasing of solar panels. The school building will be connected to a solar-powered energy grid that will help alleviate the never-ending power outages in Lae city and Unitech. This project is funded by the VC office and is expected to expand to other academic and schools upon the success of this first installation on the Applied Physics building rooftop

II. National Radiological Laboratory

The construction of the national radiological laboratory commenced in July 2023 and was completed within 8 months. This should help alleviate the space limitation to address the increasing number of students, postgraduate and research study rooms and laboratory classes. We are looking forward to the opening in May 2025. The photos show the completion of the laboratory building..



Installation of Earthquake Monitoring System at the School

The Port Moresby Geophysical Observatory (PMGO) Branch of the Geohazards Management Division (GMD), Department of Mineral Policy and Geohazards Management (DMPGM) and Rabaul Volcano observatory office in collaboration with Geoscience Australia and School of Applied Physics has successfully installed seismic monitoring station within the premise to monitor earthquakes around the country. It can register earthquakes happening in neighboring nations as well, depending on the magnitude of earthquakes. The seismic station will be upgraded to host the broadband data network with the signing of the MOU in 2025. It is working very well and is being monitored online.

Major Achievements of the 2024 Academic Year

- History in the making for the School of Applied Physics with the first female PhD in Applied Physics in PNG.
- Academic Staff member promoted to esteemed position of Professorship.
- Review of PG Courses and renamed to MSc in Applied Physics with Electronics and Instrumentation.
- Introduction of new PG Course in Renewable Energy Access and Climate Change
- Completion of the National Radiological Laboratory.
- Five Staff members got a promotion in 2024.



SCHOOL OF APPLIED SCIENCES

The School of Applied Sciences offers two very different and separate degree programs: Applied Chemistry and Food Technology. The school is committed to training students at both undergraduate and graduate levels to the highest quality. Our vision is "To become a school that produces intellectual manpower for Papua New Guinea's development and sustenance".

Our mission is "To focus on high-class teaching and quality research, continuously strive to produce future leaders rich in intelligence and innovations in the field of Applied Chemistry and Food Technology and simultaneously concentrate on strengthening and enlightening the community".

The school activities in 2024 were focused on:

- Benchmarking of the Applied Chemistry & Food Technology programs
- Recruitment of academic staff
- Improvement of current facilities
- Introduction of Master's Degree course

Teaching and Curriculum

Undergraduate Programs

Our main activities this year were centred around the following:

- Equipping our classrooms with proper teaching aids like projectors and their accessories. Laptops and desktops are available for academics and teaching assistants to use.
- Small instruments and other necessary items for the student laboratory and practical classes.
- Course handbook for our two programs, section heads going through and editing course details and subject specifications.
- Commenced some initial work on the school's webpage, however, much is yet to be done.
- Benchmarking of our two programs. We have identified the Australian universities with which we want to benchmark our programs and have commenced the necessary documentation and processes.

1.2 Postgraduate programs

The school offers Master of Philosophy and Doctor of Philosophy in both Applied Chemistry and Food Technology.

- Master of Science in Applied Chemistry was developed and approved for commencement in the 2025 semester 1. The MSc in Food Science & Technology is still being developed.
- Two of our part-time tutors completed their MPhil studies and were cleared for graduation in 2025. We had a number of applicants accepted to commence their MPhil and MSc studies in 2025.
- One of our staff pursuing PhD studies at James Cook University was cleared for graduation in 2025, whilst another one of our staff commenced his PhD candidature this year. This brings to 3, the total number of academic staff members in various stages of their PhD studies in 2024.

Staffing and infrastructure Staffing

Academic staff recruitment

- Four (4) new academic staff members joined the school: a Professor of Inorganic Chemistry, an Associate Professor in Inorganic Chemistry, a Senior Lecturer in Food Processing and a Senior Lecturer in Food Microbiology. This has boosted staff strength in both programs. Two more staff are expected to join.
- One online lecturer was engaged to teach a subject in the new MSc Applied Chemistry program.

Facilities

- The University approved a funding assistance submission for a pre-fab container office building, and payment was made to a contractor to begin construction. The work has not yet been completed.
- Our Industry partners, the National Fisheries Authority, pledged to renovate, upgrade and equip the Food Processing plant with the scoping and some initial components of the work done this year. The rest of the project will commence in January 2025.
- The university funding issues affected a number of our planned laboratory procurements and activities for the year.

Partnership, collaborations, community and industry engagements

The school is well-connected to government departments, as well as the food, agriculture, chemical, and mining industries, through research, short courses, and consultancies. This partnership has helped in many ways to both the school and University as a whole and has reflected well in the employment status of our graduates and also in securing industrial training attachments for our third-year students.

Short Courses & trainings

Short Certificate Course: Food Safety Course: Science & Application Training: Farm to the Fork

- This is a popular short course offered to the food and allied industries every year. As usual, this year, all three levels of the short course were conducted with 10-15 participants in all levels.

World Food Preservation Centre, India – collaboration for short-term training and research

- In December, one of our colleagues was able to link the school with the World Food Preservation Centre in India for membership and future collaboration in the area of food processing, preservation and post-harvest. Contact was established and discussions around an MOU were initiated, which will be progressed in 2025.
- This link opened opportunities for our staff to go for the Indian Government fully funded short-term training in the area of food packaging.

3.3 Consultation services

This year, the school continued to offer consultation services, especially in laboratory analyses, in the areas of microbiology, food analysis and chemical analysis. The school has a good number of industry partners who have been consistently using our services over the years.

Collaborating partners in research

- We have members of staff engaged in the PIURN projects with partner universities in the Pacific.
- The Department of Research Science & Technology announced the availability of funds for the Bioprospecting and Product Development project in October. Unfortunately, actual funding is still pending.
- The colleagues in Food Technology had a potential collaboration meeting with a PNG Fisheries Global representative on some potential research and development opportunities, especially in product development in the fishing industry.

Members of Committees, Boards

A number of our staff serve on various important committees and boards both in the university and on national levels, in the industries, government organizations, non-government organisations and church groups.

- We have staff members in various committees of the Academic Board.
- Some are members of the commodity boards, like the cocoa and coffee boards, contributing to policies on these commodities, quality parameters and other necessary considerations to enhance trade.
- Some sit on the national biological and chemical standards under the National Institute of Standards and Industrial Technology (NISIT). One of our staff is a member of the National Food Sanitation Council, Biological Standards Committee and Pacific Islands Standards Committee on Food and Food Products.

Community impact projects

Improving the lives of rural communities through the transfer of technology for sustainable development and community empowerment is an essential aspect of what our staff do or are involved in. These projects address the real problems affecting everyday Papua New Guineans and help to raise the standard of living of our people.

- One of our staff continues to work in close consultation with the Fresh Produce Development Agency (FPDA), Church Organisations, interested Provincial and Local governments, as well as farmer groups on designing, building and use of solar dryers. Initially, these solar dryers were designed for drying bulb onions; however, recently there has been an increase in their use for drying coffee and cocoa. The coffee and cocoa dried using these dryers have resulted in high-quality beans, leading to increased sales and generating good income for the local farmers.
- Apart from these actual project collaborations, we also have farmers, farmer groups, and individuals coming into the school seeking advice from staff on some specific projects that they are working on or are interested in.

3.7 National Food Testing & Monitoring Center – highlights of 2024

1. NFTMC Laboratory Accreditation to ISO/IEC 17025:2017 Standard, July 2024

The ISO/IEC 17025:2017 Standard titled “General requirements for the competence of testing and calibration laboratories” specifies the general requirements for the competence, impartiality and consistent operation of testing laboratories.

The NFTMC Laboratory received its accreditation from PNGLAS on the 19th of July 2024. The scope of its accreditation includes testing for histamine in fish and fisheries products by the HPLC method and various microbiology methods (E. coli, Total Plate Count and Coliform bacteria (Total and faecal). NFTMC can also offer a wide range of testing in food and environmental matrices for microbiology and chemistry, which are not currently included in its scope of accreditation, and is working toward their inclusion soon.

By gaining accreditation, NFTMC now effectively demonstrates that it (1) is competent to offer laboratory testing activities, (2) can generate valid test results from its laboratory activities, (3) proves that it operates impartially, (4) operates consistently, (5) conforms to ISO 9001 Principles, and (6) is commitment to ensuring the quality of its laboratory results. Clients, regulatory authorities, accreditation bodies and other stakeholders now have the confidence to use NFTMC for analytical testing needs.

Consequently, NFTMC has now received increased client requests for analytical testing of their products.

Due to increased interest in the analytical services it offers, NFTMC has already begun working on expanding the scope of accreditation to include additional analytical tests. This will be particularly evident in the proximate analysis of food/feeds, as well as additional microbiology tests and elemental analysis using some of its advanced analytical equipment.



2. NFTMC, a Bronze Sponsor of the Unitech Career Fair, August 2024

NFTMC was proud to be a Bronze Sponsor of the PNGUoT Career Fair, 2024, which took place here on campus on the 30th and 31st of August 2024. As part of its marketing strategy, NFTMC made a bold move to withdraw this sponsorship and participate in the career fair.

3. ISO/IEC 17025 Quality Management System Training, October 2024

As part of its Quality Management System improvement, NFTMC sent 3 of its laboratory personnel to undergo a week's training on ISO/IEC 17025 Quality Management Training from 7-10 October 2024. This training covered key areas of the standard, including internal audit, measurement uncertainty, and method validation.

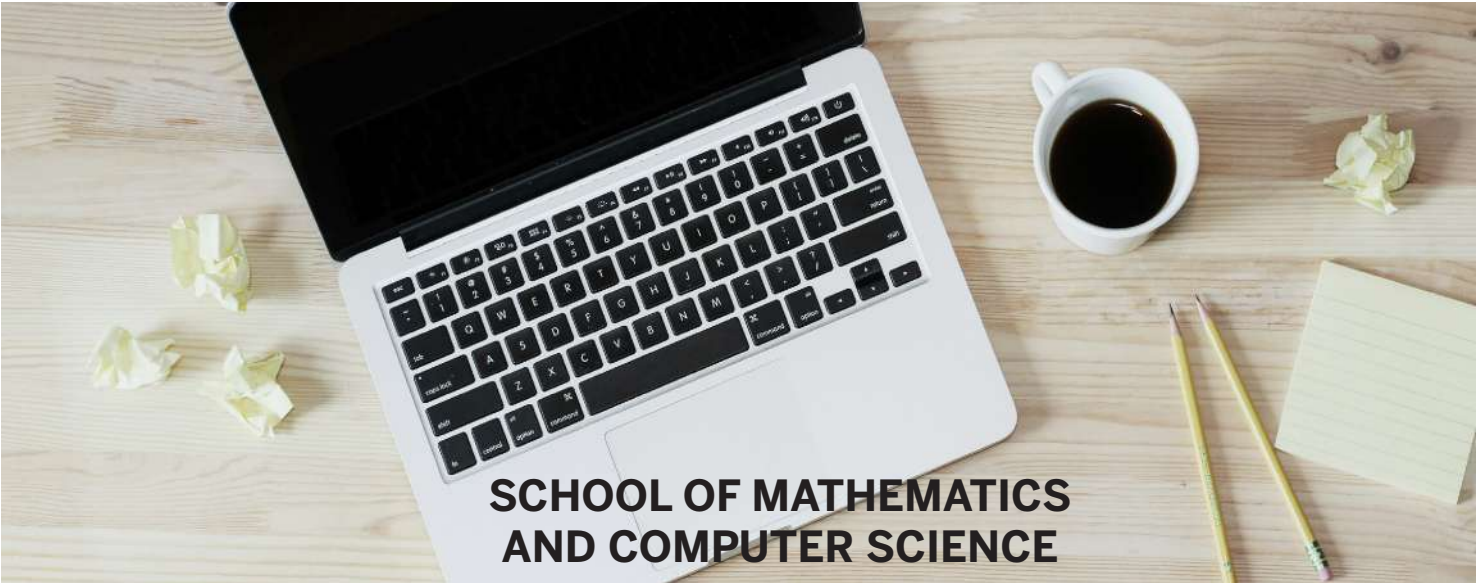
4 . NFTMC offers the first Student Industrial Training Placement for Applied Chemistry Students.

From November 2024 to January 2025, NFTMC trained its first third-year student industrial trainee from the Applied Chemistry Degree program. The student trained under the close supervision of NFTMC personnel in microbiology and chemistry sections and completed the training.

5. NFTMC Support for Undergraduate and Postgraduate Students Research

NFTMC continues to offer support by allowing its equipment to be used by both undergraduate and postgraduate students at the School of Applied Sciences. It will contribute to supporting this space, as it remains an integral part of the school.





SCHOOL OF MATHEMATICS AND COMPUTER SCIENCE

Introduction

The school offers two four-year Bachelor of Science programs in Applied Mathematics (BSAM) and Computer Science (BSCS). We also provide teaching services in Computer Science and Mathematics to other academic schools. The Applied Mathematics program started in 2022 with its first intake of 25 students.

The school's mission is to produce quality graduates in Computer Science and Applied Mathematics who meet standards compatible with those of other universities in the region.

Teaching Activities

The school revised its Computer Science subjects to adhere to the engineering program accreditation process requirements. The new curriculum has four subjects per semester, each with six hours of contact time per week. A total of 32 subjects enables the students to cover all areas of Computer Science including ICT, Networking, Databases, Programming, Operating Systems, Software Engineering, and Data Science. This gives our students the advantage of being introduced to all areas of computer science before entering an industry where they will begin to specialize.

The new Applied Mathematics program is tailored to produce graduates in the higher education sector with a solid grounding in Mathematics and the ability to solve industry-based problems. The program aims to equip students through advanced computing aids, appropriate theories, and mathematical skills to solve problems in Statistics, Reliability, Science, Technology, and Engineering.

The Mathematics service subjects have also undergone many changes. Most Schools that we service prefer compressed versions of the number of Mathematics subjects and/or topics in their syllabuses. This often means two subjects in a year are combined into one and taught in one semester. This has decreased the number of subjects that the School teaches per School, but the contents are more compact and rigorous.

The staff profile includes five PhDs, ten Masters, and six Bachelor's degree holders. In addition, the School engages three to five part-time teaching staff each semester to make our programs operational. Staff are generally very committed and competent.

Graduates Feedback from Industry

The School recently received positive feedback from various industries about our recent graduates working with them. Some organizations that contacted us include Santos, PNGFM, Nasfund, commercial banking firms, telecommunication and mobile companies, and others.

The demand for Computer Scientists is increasing with the rise in new technological developments around the globe, and PNG is no exception. We prepare our graduates with the fundamental skillsets to easily specialize in specific technical areas in the industries depending on industry applications.

Mathematics subjects provided to other disciplines ensure that the graduate has sufficient mathematics knowledge for logical reasoning, identification of appropriate mathematical tools for problem-solving, and competent computation ability.

Final Year Projects

There are 27 student projects in total. The projects cover a wide range of topics including:

- Hybrid Cryptography for Cloud Computing
- Secure File Transfer System with Emphasis on Encryption and Data Security
- Grid Computing
- Exploring Decentralized Data Collection Approaches to Enhance Census Data Accuracy
- An Analysis of Cloud Security Problems
- Avionics Data Analysis and Diagnostics
- A Comparative Assessment between Traditional WAN and SDWAN
- Online Shop in PNG
- Online Voting System
- Instant Local Area Network Messenger
- The Clinic Assistant
- A Comparative Analysis of Text File Compression Techniques
- Insurance Management System
- Computer Networking Using Wireless Network
- Credit Card Fraud Detection System
- Blockchain: Enabling Decentralization in Distributed Systems
- The Rise of Software Defined-Wide Area Network (SD-WAN) Technology in PNG
- Online Scholarship Application for WHP Provincial Government
- Student Association Database Records App
- RYU (SDN) Firewall Controller
- Car Rental Web Application
- Analyzing Python Proficiency: Can PNGUoT Computer Science Students Make Contributions to PyPi Libraries?
- Vehicle License Plate Recognition System Visualization of Transitive Security in Tree Map Charts
- Neural Networks in Facial Recognition Software
- Libraries Crossing Software Ecosystems
- System Software Creation in PNG

Research and Highlights of Publications

Our research areas in Mathematics depend on the staff composition. Our main research areas are Topological groups and rings, Mathematical modeling and differential equations, Statistics, and discrete mathematics. In Computer Science, current interests include Database systems and the design of Computer apps that can store, process, and retrieve data.

Professor M. Ursul, an all-season writer, contributes one paper each year for publication in distinguished journals. He is currently supervising a PhD candidate Mr J. Lanta from his home country Moldova.

Mr B. Mirou is the only computer science staff member undertaking PhD studies. His research is on the Application of ICT in Agriculture, which he is about to complete.

Community and Industry Engagement

The School is actively involved in community engagements, such as writing and marking ICT and Mathematics exams for the Department of Open and Distant Learning (DODL), PNGUOT's non-school leaver, and the PNG National Department of Education (PNG NDoE) Grade 12 national examinations.

Other areas of our community engagements include supporting PNG Unitech's Satellite Campus in Simbu Province.

Mr Puy is currently developing the Morobe Traffic registry database management system. The system will help the traffic office with the collection of traffic fees and planning. School Technical Officer Mr Silas was engaged in the office cabling.

Dr Mohsen successfully conducted two weeks of training on MatLab for Bank of PNG staff in November.

Achievements

School Learning Management System, tSMAS, has been integrated with the main student records database to process student marks in semester 1, 2023.

Mr L. Nerit has incorporated additional functionalities and features to accommodate user requirements from schools such as other Academic Schools, TLMU, Accounts, and Student Admin & Records.

Mr Nerit (tSMAS Developer) was asked to help with the student records for semester one. He accomplished the task in 3 weeks by automating the uploading process of student records from respective departments directly into the student's main records database. This upload function is now automated through t-SMAS.

Ms Doris Benig secured a scholarship to do PhD studies in New Zealand in 2024 under the New Zealand government scholarship.

Mrs Sine Banit, who works in the department administration office, completed her studies at Divine Word University and will graduate in March 2024.

Weekly Seminars

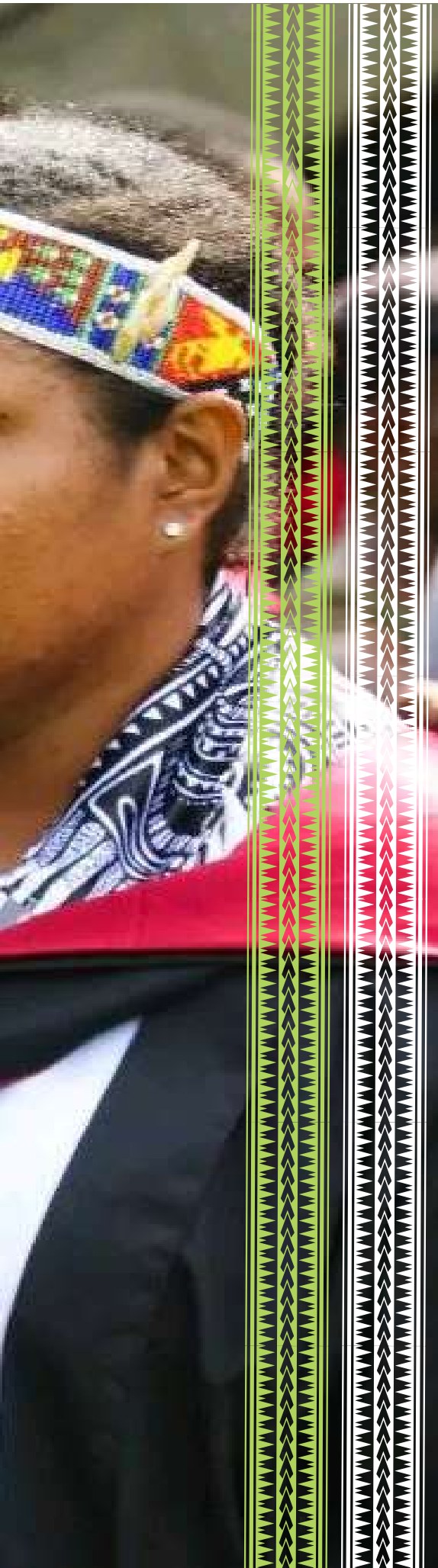
The school staff conducted weekly seminars covering various computer science and mathematics topics. Here are the seminar titles:

- Online BSAM Advisory Presentation
- tSMAS Learning Management System
- AQAT and New Paper
- Bifurcation Analysis of a SIR Epidemic Model Through Differential Equation Approach
- Tensor Analysis
- Linux OS

Graduated Students in 2023

In 2023, 17 students graduated from the undergraduate Computer Science program within the Department of Mathematics and Computer Science. It's worth noting that there were no graduates in Mathematics during this period, as our Mathematics program commenced in 2022, and the students will complete their final year in 2025. Additionally, there were no postgraduate students graduating from the Mathematics and Computer Science Department in 2023





Graduated Students in 2023

In 2023, 17 students graduated from the undergraduate Computer Science program within the Department of Mathematics and Computer Science. It's worth noting that there were no graduates in Mathematics during this period, as our Mathematics program commenced in 2022, and the students will complete their final year in 2025. Additionally, there were no postgraduate students graduating from the Mathematics and Computer Science Department in 2023

Benchmarking/Accreditation of MCS Programs

Concerning our computer science program's benchmarking/accreditation process, we have communicated with Dr. Alexandre Mendes from the Discipline of Computing and Information Technology at the School of Information and Physical Sciences within the College of Engineering, Science and Environment at The University of Newcastle, Australia. We have contacted them to assess our department's computer science program. Initially, they responded positively to our request, prompting us to continue our correspondence. If we do not receive a reply from them, we will explore alternative options.





The 2024 Annual Report for Bulolo University College (BUC) highlights key developments across staffing, academic programs, student enrollment, research, and infrastructure. This year marked significant progress in academic delivery, staff development, and strategic partnerships, reflecting BUC's ongoing commitment to academic excellence, institutional growth, and national relevance.

Staff listing

Category	Number	Comments
Academic	11	(9 x permanent and 2 x temporary)
Technical Officers	5	All permanent
Admin Support Staff	13	(10 x permanent and 3 x temporary)
Handyman and Janitor	40	Grounds, Security, and Mess
BUC Clinic	2	2 x Nursing staff
BUC Employees	6	BUC Paid Employees
Total	77	

Departures

In 2024, several staff members departed due to various reasons, including personal circumstances, new employment, medical issues, retirement, and non-performance. The following individuals concluded their service during the year: Ms. Kimel Yasepa (Accounts Clerk), Ms. Shanick Tingke (Casual Nursing Officer), Mr. Joe Reni (Permanent Patrolman), Mr. Giwibing Ones (Handyman), Mrs. Cathy Nohuan (Temporary Cook), Ms. Anna Benny (Temporary Cook), Mr. Sogu Yaling Gwaso (Library Assistant), August Saling (Temporary Patrolman), John Abe (Temporary Patrolman), Samson Koren (Temporary Patrolman), Felix Wan (Temporary Patrolman), Mr. Leonard Hansutan (Part-time Lecturer).

Recruitment

Mr. Samuel Mulasa was appointed Senior Stores Supervisor in October 2024. Several positions vacated by former staff were filled during the year, including Ms. Angela Saun (Admin Assistant - Security), three temporary patrolmen (Mr. Trex Harold, Mr. Robin Paul, and Mr. Waike John), and Mr. Eros Usang (Temporary Cook).

Staff Development and Welfare

- i. Mr. Tombo Warra is in his fourth year of PhD studies at James Cook University, Australia, and is expected to complete in November 2025. His research focuses on the functional diversity and plasticity of tropical rainforest trees along elevation gradients in PNG.
- ii. Ms. Priscilla Menin, a part-time Technical Instructor, is in her second year of Master of Philosophy studies, supervised by Dr. Jimmy Moses and Dr. Rachael Aisoli-Orake. Her research explores the socio-economic impact of pine forestry plantations on the Manki Clan in PNG.
- iii. Mr. Eko Maiguo began his PhD in Agriculture in 2024 at the School of Agriculture, with completion expected in 2027.
- iv. In April 2024, nine academic staff attended an in-house departmental workshop on statistical data analysis using R and Jamovi, facilitated by Dr. Jimmy Moses from the School of Forestry.

The Delivery of New Degree Program and Cessation of Forestry Diploma

- In 2024, the Bachelor of Forest Resource Management (BFRM) program entered its second year of implementation, following its approval by the Academic Board on September 23rd, 2022, and its commencement in the 2023 academic year. The Diploma in Forestry program was phased out, with no new intake in 2023, and the final cohort is set to graduate in May 2025.
- BUC held its first Diploma in Forestry graduation ceremony on campus, marking a historic milestone after more than 20 years of students graduating at the main Unitech campus.

The National Accreditation and International Benchmarking

- The Form 6 application for national accreditation was submitted in early 2023 and subsequently approved, enabling BFRM students to receive TESAS scholarships in 2024.
- Dialogue continues with the Australian Institute of Forestry (AIF) and forestry academics at the University of Melbourne and the Australian National University as we work toward benchmarking and international accreditation of the BFRM program.

AMP for DODL for PNGUoT

Bulolo University College hosts the Adult Matriculation Program under DODL of PNGUoT. Established in 1994, the program enrolled 185 students in 2024 (106 males, 79 females).

Number of Students: Bachelor in Forest Resource Management (BFRM)

Level	Number of Students		Total	Comments
	Male	Female		
BFRM 1	15	7	22	
BFRM 2	15	11	26	History for these pioneer students
BSc 2	10	11	21	From the main campus
Dip For 3	15	12	27	Final Diploma Year 3 students
Total	55	41	96	

The 2024 academic year closed with a total of 96 students enrolled at Bulolo University College, comprising 55 male and 41 female students.

Postgraduate Supervision

Mr. Eko Maiguo is no longer the Principal Supervisor of Ms. Ivy Kiele, due to Mr Maiguo's commencement of PhD studies in 2024. Professor Yusuf Sudo Hadi of the School of Forestry is now the Principal Supervisor.

Undergraduate Supervision

- Five academic staff members from BUC were involved in supervising final-year research projects for students from the School of Forestry at the Taraka campus.

Conference and Seminars

- In 2024, BUC hosted a seminar featuring a group of Paleontologists and Biologists from Flinders University and Western Sydney University in Australia who presented their study and findings after investigating traces (fossils) of petrified animal and plant pollen at Otibanda formation and other areas around the Bulolo area.
- BUC continue to host its internal research seminars. So far, three seminars have been held.

Research Collaborations

- In 2024, initial dialogue was established for a new research collaboration with Dr. Simon Tierney of Western Sydney University to engage a final year student in 2025 to undertake baseline Melittology (bee) studies to explore plant pollination ecology.
- Mr. Gibson Sosanika advanced a seedbank and conservation program for threatened and native PNG tree species in partnership with the Millennium Seed Bank at Kew Gardens, UK. Funding will be finalized for the project to commence in 2025.

Publication

- Mr. Benson Gusamo authored a book chapter titled “Importance of Araucariaceae for Plantation Development in Papua New Guinea,” published by IntechOpen—the world’s leading publisher of Open Access books—in the volume “Conifers – From Seed to Sustainable Stands”

INFRASTRUCTURAL FACILITIES

- BUC received four projectors from the ICTS Department; one has been installed, with the remaining three scheduled for installation in early 2025.
- Lands officers from the Department of Lands and Physical Planning in Lae conducted a site inspection to secure formal titles for key BUC land portions. Priority areas—Portions 409, 410, and 411—host major infrastructure, making title acquisition urgent. Submission for title pending full inspection report from the lands officers.
- A 20m x 20m area on Portion 410 was allocated to the Water PNG project for a bore water pump station—one of four bore water stations in the Bulolo District water supply project. A formal land-use agreement is being drafted for finalization in 2025.
- A 40-bed male dormitory proposal was submitted to the National Finance and Planning Office to address increased student intake and aging accommodation facilities.
- To address ongoing law and order issues, the school prioritized lighting upgrades, spending K42, 000.00. The lighting system was completed in 2024.
- Perimeter fencing using V-crimp material is continuing for completion in 2025.
- BUC constructed a temporary hall for the 2024 graduation ceremony, with plans to replace it with permanent facilities for future graduations.
- BUC has prepared a draft 5-Year Strategic Plan 2025 to 2029, which will be finalized at the beginning of 2025.



Figure 1a. Temporary hall constructed



Figure 1b. Students seated during graduation.

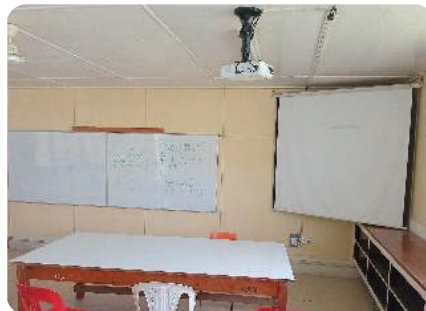


Figure 2. Projector installed in the lecture room.

CONCLUSION

2024 was a year of transition and advancement for BUC. With strengthened staffing, new academic directions, growing student numbers, and meaningful research collaborations, the College remains on course to deliver quality tertiary education and drive innovation in forest resource management in Papua New Guinea.





DEPARTMENT OF OPEN AND DISTANCE LEARNING

1.1 ONLINE EDUCATION

Introduced in 2022, the Online Education Project was initiated to expand access to academic programs through digital delivery. Since then, it has experienced remarkable growth, with student enrolments in the eight academic programs increasing exponentially each year. This trend reflects the growing confidence in online education as a credible alternative pathway in Papua New Guinea's higher education sector. The programs are intentionally aligned with on-campus programs in terms of learning hours, content, assessment, and certification, ensuring graduates achieve the same academic standards. This effort marks our continued contribution to building a knowledge-based society through inclusive education.

Student Enrolment by Gender

Level	Gender		Subtotal
	Male	Female	
Year 1	268	187	455
Year 2	19	25	44
Year 3	6	8	14
Grand Total	293	220	513

Student Enrolment by Department & Course of Study

School	Course	Subtotal
School of Business Studies	Accountancy	123
	Applied Economics	79
	Management	78
	Business IT	50
School of Communication and Development Studies	Communication for Development	82
School of Mathematics and Computer Science	Applied Mathematics	22
School of Surveying and Land Studies	Property Studies	29
School of Architecture and Construction Management	Construction Management	50
Grand Total		513

1.2 Activities

1.2.1 Strategic Partnerships

- Signed an MoU with Port Moresby Technical College (POM TEC) to establish a resource centre that supports online students based in Port Moresby.
- Initiated negotiations with Star Mountain Education Foundation to set up a resource centre for online education in Tabubil, Western Province. Discussions are ongoing.
- Successfully negotiated with DHERST for online education students to be considered for the Higher Education Loan Program (HELP) and TESAS scholarships

1.2.2 In-house Staff Training Program

- A series of internal capacity-building workshops was delivered to improve the quality of online course development and delivery:
- Training on developing interactive e-learning modules to enhance student engagement.
- Instructional Design Series I: Crafting learning objectives and sequencing content using storyboarding techniques.
- Instructional Design Series II: Designing online activities that employ student-centred instructional strategies.
- Instructional Design Series III: Creating interactive, self-paced learning materials.
- Designing game-based quizzes to support self-directed learning.
- Enhancing Zoom sessions with interactive and game-based activities.

1.3 Future Plans for Online Education

- Implement hybrid learning models that enable the simultaneous teaching of on-campus and external students.
- Advocate for provincial governments to establish resource centres in remote areas, offering students access to stable internet and digital learning resources.
- Expand the program internationally, reaching students beyond Papua New Guinea.
- Forge strategic partnerships with globally recognized digital learning universities and educational technology agencies.

2.1 MATRICULATION PROGRAM

This is a pre-university program set out to create a pathway for non-school leavers to upgrade their marks and subsequently secure admission to university degree courses. Whereas the primary focus is on upgraders with interest in joining PNGUoT, "graduates" of this program have for long used these qualifications to enter various colleges and universities of their interest and choice within the country.

The delivery of this program is primarily conducted in public secondary schools (affiliates) across the country, with direct support from school administrations and teaching staff, respectively. Additionally, a few study centres operate as franchises. An affiliate study centre is an established public secondary school that enters into a formal agreement/understanding with DODL to offer this program, while a franchise study centre is an established private institution (not necessarily a secondary school) that offers this program on behalf of DODL. The main distinguishing factor between the two is that franchise study centres pay for their teachers, while for the affiliates, DODL meets the payment.

2.2 Enrolment for 2024

Level	Enrolment	Total
Semester 1, 2024	5,555	5,555
Semester 2, 2024	2,751	2,751
Grand Total		8,306

2.3 Activities

2.3.1 Strategic Partnerships

- **MoU with Warango Secondary School:** Signed a Memorandum of Understanding (MoU) with Warango Secondary School to extend the matriculation program to all interested learners in Pomio District.
- **Engagement with NDoE:** Held a meeting with the National Department of Education (NDoE) to explore a possible mechanism for running both FODE and DODL programs concurrently within existing public secondary schools.
- **Stakeholder Annual Workshop:** Conducted a stakeholder workshop in Port Mosbey aimed at identifying strategies to integrate technology-enabled learning into the matriculation program.

1.4 Future Plans for the Matriculation Program

- **Expansion to Private Secondary Schools:** Ongoing negotiations to extend the DODL Matriculation Program to private secondary schools where FODE is not currently available.
- **Franchise Centre Expansion:** Plans are underway to establish additional franchise study centres nationwide, increasing accessibility and reach.



TEACHING & LEARNING METHODS UNIT



Introduction

Following the pathway laid out in our Strategic Plan, 2020 – 2024, the Teaching & Learning Methods Unit (TLMU) has been transforming its functions. We continue to support the development and implementation of policies and procedures for the paperwork associated with lecture plans, timetables, teaching allocations, student evaluations of teaching, and academic quality assurance processes, we provide academic support to both staff and students and maintain training supporting the transition from manual to automated electronic learning management systems, such as Google Classroom. In addition to streamlining these processes, TLMU has expanded in-house training by outsourcing our soft skills training programs, focusing on this area to create a sustainable training program for all university employees.

Staffing

The current staffing for TLMU is: Director – Dr. Immaculate Azabo, Acting Training Officer/Lecturer - Ms. Kwadi Huwe, Secretary/Administration Officer -Miss Lorraine Senginawa and Ismael Dono is the IT Officer who is currently on a temporary staff basis.

Undergraduate Program Academic Support

In cooperation with the School of Communication and Development Studies (SCDS), TLMU continues to provide academic support to undergraduates of PNGUoT through the Academic Resource Centre (ARC) for weekly lunch hour face-to-face lectures on "soft skills" topics. We also provide supervision of internal industrial training (IIT) to undergraduate students, as well as to Technical and Vocational Education and Training (TVET) students of Morobe Province, in partnership with the Career Development Office at PNGUoT. We also serve as the Secretariat for the Student Online Evaluation of Teaching (SOET) and the Academic Quality Assurance Team (AQAT) for the University's thirteen academic schools.

Postgraduate Student Academic Support

TLMU provides academic support to postgraduate students in the preparation of theses (via instruction on the use of TURNITIN), through face-to-face training and Q&A & academic advice weblogs.

Staff Support

TLMU provides both curricula, pedagogy, and software/hardware ICT training to academic staff (via the annual Postgraduate Course in Student-Centred Teaching (PGCSCT)), offered in cooperation with the SCDS. This course consisted of the following modules, offered to nominated academic staff members at the University an expanded one-year pedagogical program meeting NQF Level 8: CD 511: LMS and Flipped Classroom; CD 512: Project/Problem-Based Learning, CD 513: International Trends in Higher Education Teaching and Learning, and CD 514: Capstone Project. Under the leadership of Lecturer and Training Officer Dora Kialo, eleven (11) academic staff completed subject requirements for the course:

1. Philip Kaupa
2. Benjamin Magip
3. John Milba
4. Bikash Moharanah
5. Alan Kumar Patra
6. Spencer Poloma
7. Sailesh Samantha
8. Albert Ude
9. Allison Wemin
10. Mathew Waimbo
11. Camilla Kwauidi Yanabis

Additionally, we offer administrative staff training in both conventional and online formats through the Career Development Office of PNGUoT.

Externalization

TLMU has been part and parcel of PNGUoT's externalization process. We provide academic support online to off-site campuses. Furthermore, we continue to assist the University and the International Telecommunications Union (ITU) with online training to extend our soft skills courses and expertise. TLMU is a partner with ITU to run Training programs in the East and West Sepik Provinces to assist farmers and principals of schools utilizing our resources with their physical infrastructure resource centers supporting rural entrepreneurship investment and trade with support from the United Nations FAO and ILO assisted by Herman Kunsei as the Country Manager of ITU.

Research Publications and Presentations

Acting Director Professor Dr *habil.* Eric Gilder attended two relevant academic conferences in 2024:

“The Ratiu Dialogues on Democracy 2024: The Return of History,” in cooperation with the London School of Economics Ratiu Ideas Forum, Turda, Romania, 8-10 September. Information: <https://ratiuforum.com/ratiu-dialogues-2024/>

Sibiu Cybersecurity Dialogues, “Digital Humanism in the Cyber Age: Reflecting a Decade of Cybersecurity Evolution and Pioneering the Next 10 Years,” Sibiu, Romania, 25-28 September. Information: <https://cybersecurity-dialogues.ro/past-editions/sibiu-congress-10th-edition/>

Asset Management

TLMU has three installations of air conditioners and two printers. We have ten Dell training laptops, five Desktop workstations, and four UPS units. TLMU also features a bottled water dispenser, a microwave oven, and an urn for providing hot water in our conference room, which is equipped with a projector and sound system.

Departmental Budget

The Teaching & Learning Methods Unit's current in-house budget is approximately PGK80,000.00 for training provision and operational costs, including internal industrial training support expenses and university-related business travel.

Future Initiatives

TLMU continues to provide logistical support for the University Debate Team both online and on-site. This includes ICT support and avenues for intervarsity virtual debates in 2024, as well as a debate judge support service every year since its inception.

The key focus of TLMU's work is ensuring high-quality teaching and learning continuity by providing instructional support to the faculty. Besides providing general ongoing pedagogical support to the University, TLMU also customizes personalized training to the individual academic staff at their behest. The Unit intensified its commitment to accelerating digital transformation in higher education, through both in-house and community outreach activities.

While supporting PNGUoT's strategic aspiration of differentiating itself by creating an integrated, customized, and continuous experience throughout the learner lifecycle, TLMU continued Soft Skills and Academic/Non-Academic Courses Training in both conventional and online modes in 2024.

Concluding Remarks

The TLMU exists to inspire excellence, innovation, and inquiry in teaching and learning within and beyond PNGUoT. In this spirit, we collaborate with individuals, academic departments, and academic support units to foster capacity in our learning community by promoting an institutional culture that values effective teaching and meaningful learning. The TLMU supports the PNGUoT family to promote real-world experiential learning through the ardent application of science, technology, and Innovation. We proudly support the university in producing world-class technocrats for the real world.





Introduction

Timber Forestry Training College (TFTC) in Papua New Guinea (PNG) plays a crucial role in the development of sustainable forestry practices and training in the country.

The institution was once a chicken farm or poultry operation in the early 1970s, but it was later purchased and converted into a training facility. It was then named "Timber Industry Training College (TITC)" and managed under the Forest Ministry.

The institution was established as a bilateral aid project between the Governments of Papua New Guinea and New Zealand. The late Honourable Ebe Olewale did the formal opening of the institution in 1979 for its formal enrolment and training.

TITC then offered Pre-Employment Technical Training Certificates (PETT) from then on until further changes of certification took effect. The policy shift resulted in many changes to the institution, in terms of management, operations, structure of governance and others.

The focus of the Institution was on training, upskilling, and mentoring young graduates to be absorbed into the timber industry, where many logging companies directly employed students. Apart from the logging operations in the country, there were other organizations like; Department of Works and Supply (DOW), PNG Forest Product, Bougainville Copper mine, Hebou Construction, Golden Square, Pryde Furniture, Curtain Brothers, Lae Builders, just to name a few that were recruiting TITC graduates for the Apprenticeship program.

The institution was established to train and equip individuals with the necessary technical skills and professional expertise in the timber and forestry industry, addressing the growing need for skilled workers in the sector.

Historically, TITC was part of the forestry sector and has been a significant industry in PNG, supporting both economic development and community livelihoods. However, challenges such as deforestation, unsustainable logging practices, and inadequate management of forest resources have prompted the need for comprehensive training programs.

In 1996, the college underwent an amalgamation process into the University of Technology and was renamed the Timber and Forestry Training College (TFTC). TFTC, over the last 46 years or so, has produced thousands of skilled workers for Papua New Guinea and the overseas labour market in the public, private, and NGO sectors, including technical skills, academia, managerial levels, and other prospects that these graduates have found successful.

The records showed that the college underwent significant changes, which also presented challenges during the transition period. TFTC is grateful for the understanding, relationship, commitment and the quick intervention of the University through thick and thin with the support and commitment of the staff, both academic and non-academic, to ensure the continued operations thus far.

The transition of TFTC from what it was before to what it is today was guided by several government policies that were enacted to improve the quality of education in PNG.

TFTC is grateful for the vision, leadership in amalgamation of the institution to be part of the University to elevate the level of training, qualification of academic staff and management capacity as a higher institution.

Academic Program

• Curriculum

Timber and Forestry Training College is a unique institution in PNG and the Pacific region, offering the only Saw Doctoring and Wood Machining courses. It also conducts apprenticeship, a training program administered by the National Apprenticeship Trade Testing Board (NATTB).

The major training components of the TFTC curriculum are made up of these Core Subjects of the College: Saw Doctoring, Sawmill, Wood Machining, Furniture Design and Manufacturing and Wood Technology, while the elective or minor courses were offered to complement the program for career advancement

The introduction of the Diploma Program in Wood Processing and Manufacturing (DWPM) came into effect in 2024, after an extensive period of the Certificate program for more than 46 years or so then as Timber Industry Training College. The transition into the University Structure brought not only the excitement and achievement of offering the Diploma program, but also the challenges and opportunities.

The Diploma program was realised because of the reform in the education system in the Papua New Guinea. The need to transform the education system arose due to the shift in education policy and the requirement to produce more Grade 12 graduates within the mainstream education system. As the mainstream education expands its enrolment because of the policy shift, this has put pressure on the higher education sector to ramp up its resources and structure to counter the influx of Grade 12 students coming from Secondary Schools each year.

The TFTC Diploma program is not only preparing for the academic journey through the University pathway, but also cater for the industry labour demand.

The development and implementation of the Diploma Program in Wood Processing and Manufacturing (DWPM) was made possible through the tireless efforts of the academic staff of TFCT with the undivided support through the Leadership and Administration of the Acting Principal then, Mr. Charles Tsirtsis, Acting Deputy Principal Mr. Mathew Wandumani and the guidance from PNG University of Technology.

The Diploma in Wood Processing and Manufacturing (DWPM) covers the following subject areas for four (4) Semesters or a two-year program. These include: Written Communications, Applied Mathematics, and Occupational Health and Safety, Tropical Dendrology, Silviculture, Timber Harvesting, Sustainable small-scale sawmilling, Conventional Sawmill, Saw Doctoring, Wood Technology, Trade Drawing (Manual & AutoCAD program), Wood Machining, Wood Design and Manufacturing, Log Scaling, Timber Business Management and Research.

Apart from what has been approved and in the first year of implementation, there were other programs that the campus anticipates seeing come into fruition in the near future. The main purpose of introducing such programs is to prepare and complement the PNG Vision 2050, PNG Forestry Authority National Forest Plan, and legislative requirements under the Forest Act 1991. PNGFA NFP directed that Down Stream Processing be implemented by 2020 into a fully timber processed industry in the country. Based on such government directives, it empowered TFTC/Bumbu campus to work towards the government's vision in the forestry sector.

Having such a vision that lies before this institution, there are challenges and obstacles to overcome in terms of deteriorating infrastructure, financial constraints, capacity building, and security issues with settlers occupying the college/campus land and many others.

• Short Course Training

The short course program that runs for one (1) week to two (2) weeks was purposely designed for company employees. Companies sponsor the programs either on campus or on-site, where trainers are flown to conduct the training at the company or designated locations. This program was very successful in the previous years, and continues to encourage reaching out to the industries and stakeholders. The onsite program was successful in 2024, with many more companies requesting that the institution conduct in-house training for their employees.

• Student Enrolment

The student enrolment has been very challenging from the previous program, because most students were selected as self-sponsored and as a result, not many school leavers were able to apply to take up this course program

The enrollment figures are as follows.

Year one (1) 2024 – First year of the Diploma program

Male:	28
Female:	26
Total	54

Year one (1) 2025 – Second year of the Diploma program

Male	32
Female	9
Total	41

Year two (2) 2025

Male	26
Female	20
Total	46

Administration

The key identified areas within the administration includes;

Staff Capacity	Male	Female	Total
Academic	19	2	21
Admin	1	7	8
Commercial & Support	35	5	40
Total staff			69

- Infrastructure/ Facilities
- Land Issues
- Security Issues
- Bumbu River

These challenging areas continue to weigh heavily on the campus and the University as a whole.

Commercial

The Campus has the potential to generate internal revenue to sustain the institutional operations as well as sustaining the training programs. The College/Campus, through its training programs, has been dependent on the training in generating funds to sustain its operations in a limited capacity.

The College/Campus has the potential to diversify its business opportunities to sustain the operations financially, which includes;

• Existing Business Activities

- » Business Area 1 Current Timber Sales through Harvesting Team
- » Business Area 2 Buy & Sell rough-sawn timbers from local suppliers
- » Business Area 3 Furniture Sales – Current
- » Business Area 4 Saw Doctoring Services
- » Business Area 5 Saw Sawmill and Chain Saw Training
- » Business Area 6 Wood Technology – Timber Treatment service

- **Proposed Business Opportunities**

- » Gravel extraction and sales from the Bumbu River
- » Brick Making and Sales
- » Real Estate – College has the land to develop into Rental Houses for the long-term business

- **Set up Sales office outside of the Campus**

- » Within Lae City – Partnership with Hardware Companies
- » Outside of Lae – Port Moresby Sales Office

With all the expertise, experience and land availability, the Campus can expand its business opportunities through the current and proposed areas.

The country is facing financial situations that have brought all government institutions to a halt. Waiting on the government warrants may or may not evenuate. Having these facilities in place and readily available to be utilised for the better development of this institution is the challenge before us. Either we take the business risk like any other businesses to work our way to survive, or we keep quiet and slowly deteriorate.

The global economic crisis is not leaving anyone behind, but taking everyone down to our knees, whether we like it or not

- **Challenges**

The challenges experienced as a result of the implementation of the Diploma program and other related operational matters include, but are not limited to;

- Immediate need for classrooms,
- Student's accommodation to cater for the new enrolments into the second year of the program.
- Additional workspaces needed in the workshops to safely perform practical assessable tasks.
- Insufficient and aging machinery to facilitate an effective academic program,
- Additional staffing in all the sections to implement the Diploma program
- Deteriorated Infrastructure
- Aging and deteriorated machinery for the Harvesting/ Logging activities
- Bumbu River washing away a Portion of the land
- Land Issues with settlers
- Security issues with settlers and vandalism
- Frequent power outages
- High cost of fuel to power the standby generator
- Maintenance of parameter fencing – High risks from vandalism and theft
- Limited Finance to boost commercial operations to sustain the college/campus



MATHESON LIBRARY

Introduction

The Matheson Library continues to play a critical role in supporting the teaching, research, and learning missions of the Papua New Guinea University of Technology (PNGUoT). The academic year 2024–2025 has been transformative, marked by significant strides in digital integration, resource development, community engagement, and infrastructure enhancement.

Executive Summary

The 2024 reporting period was marked by significant developments across library operations, infrastructure, and digital systems. The focus was on modernizing library services, enhancing user engagement, and building capacity for future growth. A mix of completed projects, ongoing initiatives, and strategic planning defined the year's efforts.

Key Highlights & Achievements

Digital Library Development

Initiated the design and development of PNGUoT's first Digital Library platform based on Islandora and Drupal 11. This project will preserve and provide open access to university research and archival resources.

Koha Integrated Library System Enhancement

Successfully implemented multiple user-centric features in the Koha ILS system, including a self-checkout interface, login integration with VuFind, and enhanced email notifications via Postfix.

Matheson Single Search Discovery Interface

The VuFind discovery interface was successfully installed and fully integrated with Koha, offering a modern and intuitive public access catalogue for students and staff.

Collection Development

Added over 1,500 new print and electronic titles in key disciplines including engineering, ICT, agriculture, and business.

Capacity Building

Conducted 10+ user training sessions, workshops, and research skills seminars, impacting on more than 400 students and staff.

Library Usage Statistics

Category	2024
Total Visits (Foot Traffic)	9000
Online Database Access	Past Exam Papers: 1305 EBSCO Total Accessed 177
Borrowed Items	273

Completed Projects

Upgrade of Library Integrated System Koha version 24.50

Implementation of the **Visitors Management System**

Adoption of **ClickUp** for project management and **Slack** for internal communication

Restructuring of the **library's organizational structure** to improve workflow and accountability

- Deployment of a **Library Analytics Platform** for data-driven decision making
- **Migration from Athena to Koha** and conversion of legacy data
- Development of **Library Website**
- Development of key library governance documents - **Library Policy** and **Standard Operating Procedures (SOPs)**
- Completion of the **Library Roof Retrofit**, enhancing physical infrastructure

Partnerships

OTML – Koha ILS Implementation,
Branch Colleges libraries (TFTC Koha ILS Library systems integrations),
The British Library Document Supply Service (BLDSS)
The National Library of Australia
Post Graduate School PNGUoT
Foreign embassies (USA, Japan, India).
Creation of a branch library - Kobal's Library (School of Civil Engineering)

Reader Services

Conducted Library Orientation (08/02/2024 at RKL. 206 students attended).
Conduct Seminars (2 Seminars conducted for library staff, 1 postgraduate seminar)
Visitors Count (9000 users)
Total Issuing of Books (273 Items issued)
Total Fine Charges (K445)

Cataloguing

Number of items catalogued = 299 items re-catalogued of displaced records from the earlier data migration.
Number of items deleted = 124 deleted duplicate records
Updates of catalogue records = A total of 445,940 records were modified from June to December 2024.

Interlibrary Loan (ILL) and Document Delivery

Requests received and processed (Local & External) 56 requests processed in 2024
Collaborative agreements

- » The British Library Document Supply Service (BLDSS)
- » The National Library of Australia
- » Post Graduate School PNGUoT

Digitization Services

Number of documents digitized = **109**

Number of documents uploaded = **1272**

- » Past Exam Papers (Digital Library): 1163
- » Past Exam Papers (Google Drive): 109

Collection Development

New acquisitions = 43 new books were successfully acquired.

Total Cost
K17,727.44

Weeding/Deaccessioning activities

Approximately 1,524 titles were removed from the SR collection and relabeled to other collections.

Damaged Items = 21

Acquisitions

Total Items (Books) Acquired: 490

Expenditure: K9,059.00

Credits: AU\$4,259.00 (equivalent to K10,352.46, pending payment)

Total Expected Expenditure: K19,411.51

ICT and Library Systems

Systems

Matheson Library bought a server in 2023, and in 2024 it was setup and was partitioned into 8 servers.

Currently functioning

Koha ILS Server – matlis.unitech.ac.pg

Currently in progress

Discover server – matdics.unitech.ac.pg

Matheson Digital Library – matdlis.unitech.ac.pg

Yet to setup and configure

Library Archive and Preservation – matarchv.unitech.ac.pg

Shamba Server – matshare.unitech.ac.pg

Usage of library management software

Active Library Users: Over **13,519 users** (students, staff, researchers) are members with previous recorded patrons. 431 member users actively accessing Koha in 2024.



Cataloguing Activities

A total of 86,965 new bibliographic records and 50 item records were added during the year. Total of 87,239 titles

American Corner

Date	Program	Key Attendees	Description
14 Mar 2024	US Embassy Visit to American Corner	Ms. Alison McKee, Mr. Damian Wampler, Ms. Connie Taulodo	US Embassy representatives visited the American Corner in Lae, assessed needs, and conducted training.
25 Jun 2024	Signing of Sister Cities Act	Mr. Damian Wampler, Mr. Carlo Capuo, Mrs. Suely Saro	Formal signing with the VC to promote PNG-US university partnerships via American Corners.
24 Jul 2024	Amelia Earhart Monument Groundbreaking & NASA Presentation	Prof. Akanda, Amb. Anne Marie Yastishock, Marsha Ivins, Mr. Damian Wampler, Gary Bustin, Ms. Lillian Keneqa, Andy Fine	Matheson Library groundbreaking and scholarship award. NASA talk by astronaut Marsha Ivins at DH.

Future Plans (2025–2026)

Matheson Library identified several strategic initiatives to further enhance library services and operational efficiency in the upcoming period:

Launch the full version of the Digital Library with a focus on The ses, PNG Studies, and Archives.

Begin retrospective digitization of rare and fragile documents.

Expand information literacy sessions to include advanced research data management.

Strengthening partnerships with national and international libraries for knowledge sharing and interlibrary loans.

Deploy RFID technology for enhanced inventory and security management.

Expansion of Digital Services

Koha System Training

Library Outreach and Engagement

Library Marketing and Communication

Upgrading Library Facilities

PNGUOT RAINFOREST HABITAT

Introduction

The Unitech Rainforest Habitat (RFH) is the subsidiary Business arm of the University of Technology. It is a fully fledged legal entity subscribed under the University bylaws. It has been a well-structured and functional organization since its inception in 1994. The Rainforest Habitat has evolved into a vast reserve of diverse biodiversity, promoting climate resistance among the floral and faunal communities, and importantly, offering thrilling sites that connect humans and nature, fostering science and interdependency.

Administration

It was the respect and acceptance of diverse cultural backgrounds and professional expertise that allowed the Rainforest Habitat to function despite the challenges and struggles of 2024.

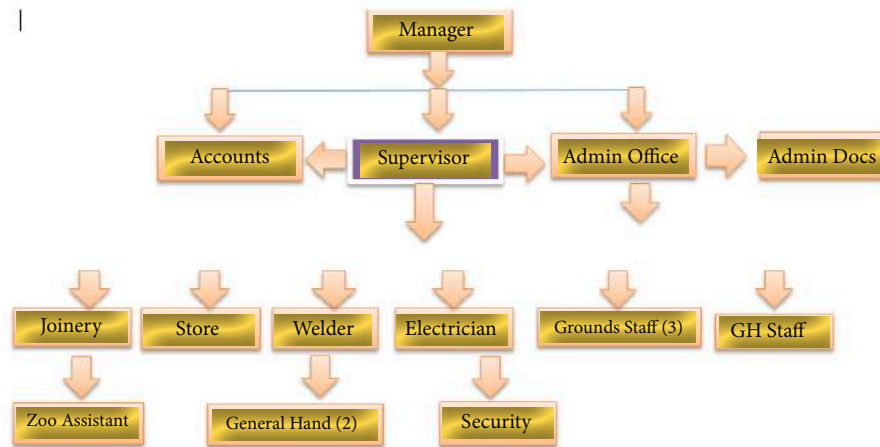
The hardworking administration team, under the leadership of Mr Joseph Boi (Acting Manager), has driven the Rainforest Habitat thus far through teamwork, commitment, and resilience.

Staffing - Rainforest Habitat employee details

No	Name	Designation
1	Oscar Monias	Accounts/Admin Officer
2	Ben Joel	Supervisor
3	Renetta Kanjau	Admin/ Documentation Officer
4	Tone Kia	Admin officer
5	Pongs Tush	Welder
6	Daniel Sai	Grounds-Staff
7	Samson Pese	Grounds Staff
8	Justine Gapenuc	Handymen
9	Job Siro	Electrician
10	Tine	Security
11	Priscilla Lakas	Guest House
12	Rodney Maljeh	General Hands
13	Andrew Sipa	Grounds- Staff
14	Andrew Bro	Shop Assistants/Night Guards
15	Roselyn Mark	Zoo-Assist
16	Barbra Biarui	Store Keeper
17	Wallance Aisaul	Joinery
18	Smith	Security



Rainforest Habitat Organization Structure



RFH ZOO

- The **Zoo** hosts a diverse collection of wildlife, including marsupials, birds, reptiles, mammals, amphibians, arachnids, and invertebrates, mainly from the Highlands and Momase regions.
- It serves as a **revenue-generating arm** of the Rainforest Habitat through entry fees:
 - Adults – K5
 - Students with ID – K3
 - Children – K2
 - Group rate – K250
- Challenge:** Persistent lack of funding limits the ability to maintain and build new, proper animal enclosures.
- Recommendations:**
 - Acquire a **vehicle** for transporting animal feed twice weekly.
 - Establish **on-site gardens** to grow food and reduce costs.
 - Propose **internal funding** from PNGUoT and seek **external donor support** for operational needs.

Function Area

- The **Function Area** is a popular outdoor venue for events, such as picnics, barbecues, weddings, birthdays, and other celebrations.
- It consists of **three designated zones**: Function Area A, B, and C.
- A **standard rate of K450** applies for all events, with payment made either in cash or via direct deposit.
- Revenue records** from the function areas are maintained and included in the financial report by the Accounts Clerk.
- Challenge:** Function Area C lacks a proper partition, leading guests to wander into unauthorized zones.
- Recommendations:**
 - Construct **additional areas (D, E, and F)** to meet growing demand.
 - Properly partition** each function zone to ensure privacy and minimize disruptions.

Gift Shop & Green House Net

- Gift Shop & Green House Net** serve as vital entry points and attractions within the zoo.
- The **Gift Shop** offers cultural artifacts, traditional items (like bilums and totems), and locally made arts, supporting the SME sector and promoting cultural heritage.
- It also functions as a **mini museum/gallery** attracting public, expatriates, and tourists.
- Main challenge:** Lack of funding has led to deterioration of facilities.
- Achievements:** Repairs completed on damaged enclosures, and overgrown trees were trimmed.
- Recommendations:**
 - Perform regular maintenance and increase the number of birds in the enclosure.
 - Propose internal funding support from the university for infrastructure and maintenance.

RFH Store (Canteen)

- The **Retail Store** serves as a key food and convenience hub for university residents, especially those living north of the Rugby Field up to Area 5.
- It also supports **Rainforest Habitat guests** by providing essential items, enhancing their stay experience.
- Revenue** is collected and banked twice a week by the RFH Accounts Clerk.
- Challenge:** Lack of **IPA Registration** and **TIN** hinders compliance and makes corporate payment processing difficult.
- Opportunity:** There is available space for **store expansion** to meet growing demand.

Guest House

The Rainforest Habitat Guest House is a home away from home to countless prominent lecturers, tutors, trainers, facilitators and students of the university of technology. It further extends its accommodation to business entities, travelers, visitors, corporate entities, sports, churches and general public on standards.

Types of Rooms	Number of Rooms	Rates Per Night
Single Rooms	4	120
Double Bed Rooms	2	150
Family Rooms	4	250
Conference Room	1	450
Common Kitchen Area	1	Free
Laundry Room	1	Free
Toilet / Shower Separate	2	Free

Progressive Financial Report March-September 2024

The financial report summary for March 2024 to September 2024

The table below is the summary of the income and expenditure for RFH in 2024 (Opening Balance: K11, 393.31)

MONTH	INCOME (K)	EXPENDITURE (K)	PROFIT/LOSS (K)	BAL(K) K11,393.31	COMMENTS
JAN	0	3,382.00	-3,382.00	8,011.31	Loss
FEB	4,000.00	8,948.00	-4,498	3,063.31	Loss
MAR	97,025	14,636	+82,389.00	85,452.31	Profit
APR	14,775	27,211.89	-12,436.89	73,015.42	Loss (Outstanding Invoice)
MAY	86,050.00	73,361.20	+12,688.80	85,704.22	Loss (Payment made to R18 for all store goods to reopen the canteen.)
JUN	9,220.00	47,518.60	-38,298.60	47,405.62	Loss (payment of new uniforms and power tools)
JUL	33,050.00	27,443.30	+5,606.7	53,012.32	Loss (Payment of 1 x Power Generator and 2x grass slasher)
AUG	27,310.00	23,211.30	+4,098.7	57,111.02	Profit
SEP	57,970.00	35,192.40	+22,777.6	79,888.62	Profit
OCT	19,370.00	47,799.20	-28,429.2	51,459.42	Loss
NOV	16,859.00	43,546.67	-26,687.67	24,771.75	Loss
DEC	35,640.00	29,463.60	6,176.4	30,948.15	Profit

The Balance as of 31st December 2024 is K30,948.15

* he estimated fortnightly payment for the staff is between K7, 000 to K8, 000. Fortnightly schedule for staff should fall between K3,500.00 to K4,000.00

Category	Total (K)	Average per Month (K)
Total Income	400,269.00	33,355.75
Total Expenditure	381,714.16	31,809.51
Total Profit/Loss	+18,554.84	+1,546.24

PNGUoT MEDICAL CENTRE

Introduction

PNGUoT Medical Centre is situated within the PNGUoT Taraka campus and it's near the Bookshop, Union shop and the Student Mess. It's easily accessible by students, staff with their dependents, and the surrounding communities.

PNGUoT Medical Centre comprises 13 nursing officers, 1 Community Health Worker (CHW), 1 Health Extension Officer, 1 Chief Medical Officer, 4 ambulance drivers, 2 secretaries and 2 janitors.

The Medical Centre has two other sub-clinics: Timber and Forestry Training College (TFTC) and Bulolo University College (BUC). Timber and Forestry Training College has only 1 nursing officer, and Bulolo University College has only 1 nursing officer. All medical supplies to these sub-clinics come from the main clinic. According to our monthly report from last year, 2023, our clinic served more than 1000 - 2000 patients each month compared to other health centres within the Lae District.

MAJOR SERVICES

PNGUoT Medical Centre opens 7 days a week to serve our students, staff and dependents and even the outside communities as well.

Our clinic operating hours are: Weekdays- Monday to Friday are from 8am – 10pm, and Weekends- Saturday and Sunday, with Public holidays are from 9 am – 4 pm only. From February to November, when the students are on campus, we usually open from 8 am till 10 pm at night to cater for students who attend classes during the day. From December to January, during weekdays, the clinic will only open from 8 am to 6 pm.

The nurses are working in 2 shifts during the weekdays, and weekends are only 1 shift. The ambulance drivers are working in 3 shifts covering 24 hours for 7 days.

The Clinic provides 8 different medical services to our clients. Students, staff and their dependents below 20 years old are free to use our services, whereas the students' dependents, outsiders and staff relatives will be charged accordingly to the services.

Outpatient consultation:

Nurses' consultation fee is K15,

HEO's consultation fee is K20,

Medical Doctor's consultation fee is K30.

The Chief Medical Officer and the HEO also do general medical examination checkup and medical reports at a cost of K50.

Day Ward Admission:

The Clinic has 5 beds at the ward and one of the beds is strictly for emergency only, while the other 4 beds are for acute – sub acute ill patients. They are admitted to be stabilized with the proper clinical management. If the condition does not improve, they are referred to the Angau Memorial Hospital and the Private Hospital upon their request.

Ambulance service:

The ambulance service is available 24/7, every day, to help both students, staff, and their dependents. During after-hours, the students, dependents or staff who are sick are brought off campus to Angau Hospital or another private hospital to get medical help. Ambulance service is free to the student, staff, and their legal dependents. The outsiders and staff relatives are charged K30 fee.

CHNS Baby Clinic:

- Every Tuesday, the clinic vaccinates every baby from 0 to 5 years old who visit the clinic. The Clinic also provides free service for the baby clinic immunization, but for the outsiders there is a fee of K15. Antenatal Clinic:
- At the clinic, 2 midwives provide antenatal services every Wednesday. The pregnant mothers are given counselling, proper check-ups and more critical information to new pregnant mothers. Family Planning Clinic:
- Every Thursday is Family Planning Day, in which women come in to take either pills or a Depo Provera injection, which is provided at the clinic. Since last year, the clinic have been providing implant services for 3-5 years.

Minor Theatre

The clinic has a minor theatre to perform minor operations, such as suturing open wounds, incisions and drainage for abscess, excising for small warts, applying pop to fractured bones, and removing sutures with cleaning of dirty sores and applying a change of dressing.

Disease Control Office

Two Disease Control Officers provide TB and HIV/AIDS, STD services to the patients for free.



SUMMARY OF DAILY OUTPATIENT ATTENDANCE

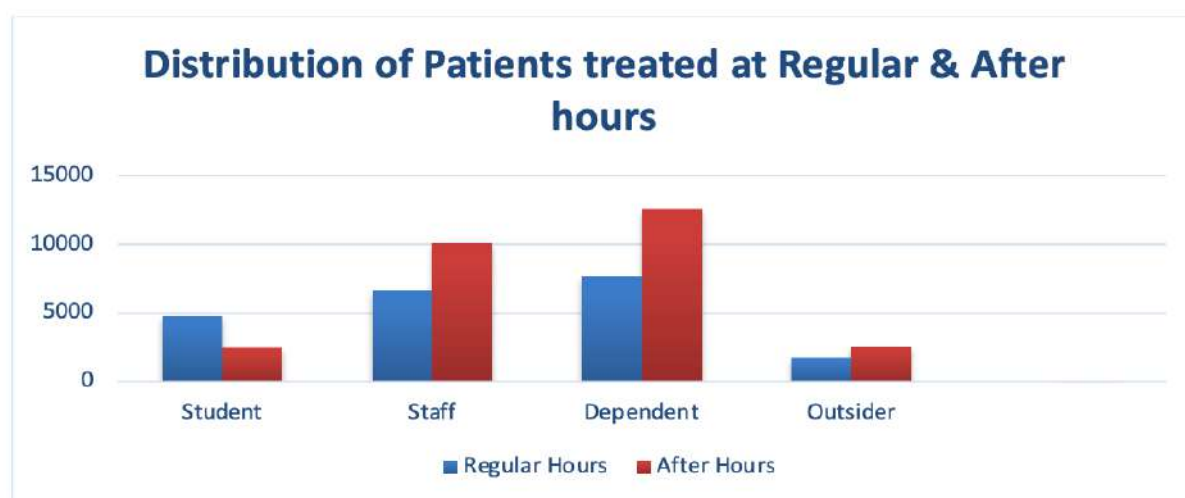
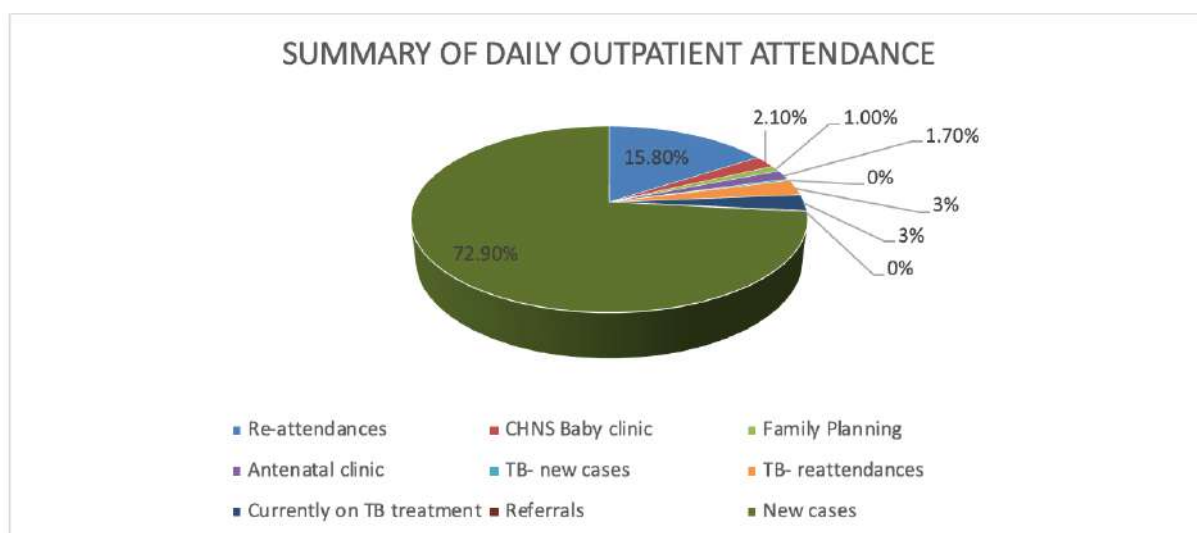
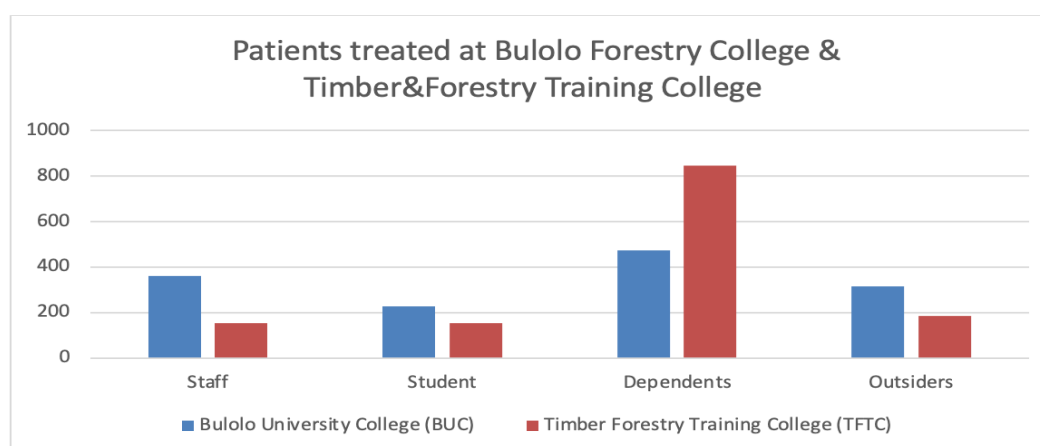


Figure 2. Showing the distribution of the category of patients being treated at regular hours and after hours at the clinic.

SUMMARY OF DAILY OUTPATIENT ATTENDANCE AT BULOLO UNIVERSITY COLLEGE & TIMBER FORESTRY TRAINING COLLEGE CLINICS

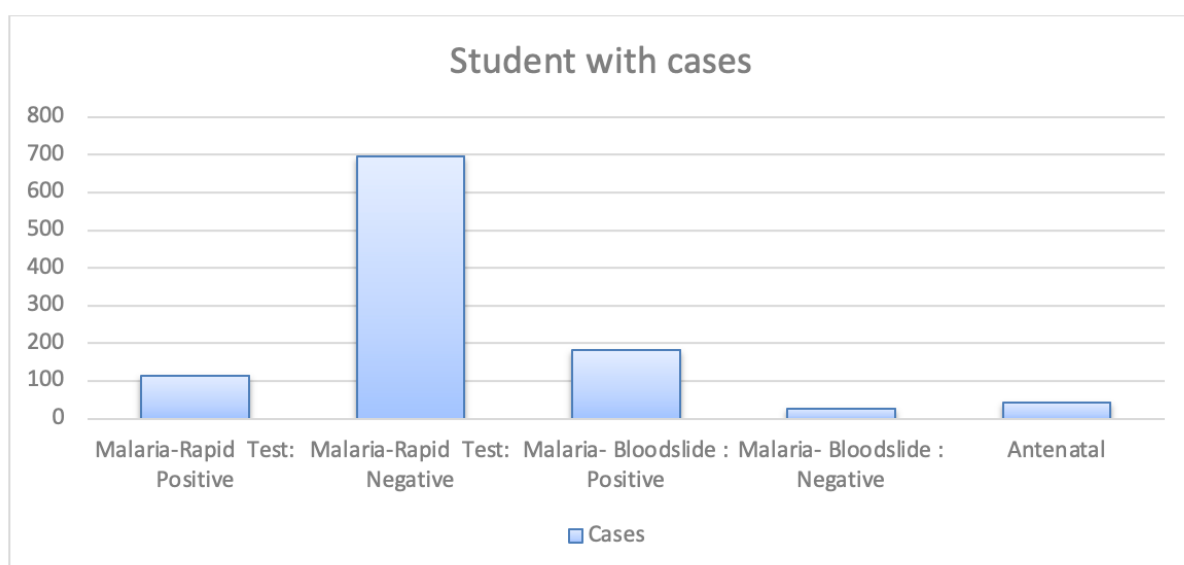
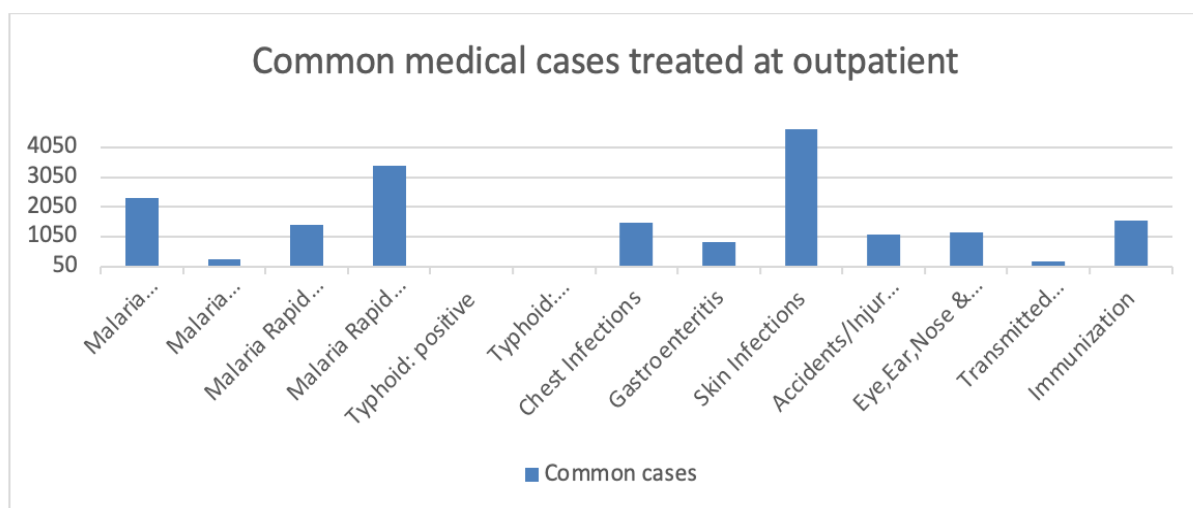
Category	Bulolo University College (BUC)	Timber Forestry Training College (TFTC)
Staff	363	154
Student	228	153
Dependent	473	846
Outsiders	980	187
Total	2,044	1,340



This column graph shows the distribution of patients treated at Bulolo University College Clinic & Timber Forestry Training College.

Patient seen with common medical cases treated at the outpatient

C	Common cases treated at outpatient	Total number of patients
1 (a)	Malaria (bloodslide) - Positive	2,358
	Malaria (bloodslide) - Negative	279
(b)	Malaria (RDT) - Positive	1,444
	Malaria (RDT) - Negative	3,448
2	Typhoid - Positive	9
	Typhoid - Negative	1
3	Chest Infections	1,524
	Gastroenteritis	877
	Skin Infection	4,683
	Accidents/Injuries	1,136
	Eye, Ear, Nose and Throat	1189
	Sexual transmitted Diseases	217
	Immunization	1,580



Total number of students treated with Malaria and antenatal students attending the clinic

Major Challenges

The significant challenges that we faced in 2024, were due to COVID-19, which made it impossible to get all the medicines that we ordered from the pharmaceutical stores in Port Moresby on time. After COVID-19, all the prices for the medicines have increased, and it was costly to even buy some of the medicines at the nearest pharmacy in town to cater for the number of patients at the clinic. The other challenge is the lack of proper equipment for diagnosis for medical conditions.

Upgrade Plan

PNGUoT Medical Centre is still under process to be upgraded to Urban Hospital Level 3, fully equipped with modern facilities and equipment. The clinic has purchased an UltraSound Scan Machine and an Electrocardiogram Machine (ECG), and it is ready to be installed. The new urban hospital will be housed with an admission ward, a surgical ward, a dental and eye clinic, with a fully equipped laboratory to do all other blood tests, an x-ray department with an ultrasound scan machine and an ECG machine too.



PNGUoT PROJECTS DIVISION

1. INTRODUCTION

In all infrastructure or non-infrastructure development projects, there are three (3) standard parameters to be managed or controlled to minimize risks and deliver a highly successful project. They are, namely, time (a planned set of activities against a specific timeframe); funding (funding sourced from government or donor agencies); and quality (standards set by respective industry regulatory authorities). Furthermore, adequate capacity of manpower with the right sets of skills and experience with the right equipment, tools and resources is also crucial for the management of the above three (3) standard parameters.

The current Projects Office or Division is supplementing the functions of the Planning Division, which has been vacant since 2013, with the support of the current Pro Vice Chancellor – Administration and the assistance of the Director of Projects.

The purpose of this annual report is to provide a status update of all the PIP & Recurrent Projects from 06th January 2024 to 31st December 2024.

The PIP and Recurrent projects are reported in four (4) categories;

Part A: The 2019 - 2024 Ongoing PIP Projects;

Part B: Ongoing PIP Projects Under the Unitech Infrastructure Program;

Part C: The 2023 - 2024 New / Ongoing Proposed PIP Projects Submission for 2025 Financial Year

Part D: 2022 – 2024 Recurrent Funded Projects;

PART A: 2019 – 2024 ONGOING PIP PROJECTS

The following PIP Projects are ongoing.

The Dining Hall Project – Budget Allocation of K20, 000,000.00

The overall budget for the New Dining Hall Project is twenty million kinas (K20, 000, 000.00) and has already been appropriated and deposited into the PNGUoT Trust Account.

Objective

The Dining Hall Project aims to increase capacity to accommodate the growing student enrollment at PNG University of Technology following the destruction of the old student mess in the 2016 student crisis.

Physical Progress Status

The new Dining Hall's overall progress is approximately **99% complete to date, including all works, with an overall completion rate of 96%.**



The Project Photos as of the 30th of December 2024:

The Construction of New Civil Road Works and New 6x2-bedroom Duplex Staff Housing Project - Budget allocation of K6,500,000.00

Objective:

The objective of this project is to address the critical housing shortage for academic and administrative staff at the PNG University of Technology in Lae, Morobe Province.

The Construction of New Civil Road works and a new 6x2-bedroom Duplex is funded under the 2019 PIP Submission for the **Construction of Staff Houses (20x Houses) for a requested amount of K20 million**. Only K6.5 million was appropriated and transferred to the PNGUoT Trust Account.

Physical Progress Status

The 6x2 2-bedroom duplex overall progress is 63% physical completion to date, 31st December 2024. A total of 55.28% of the contract sum has been paid to date.

The Project Photos as of the 30th of December 2024:

Duplex 1 (Unit 1 & 2)



Duplex 2 (Unit 3 & 4)



Duplex 3 (Unit 5 & 6)



Duplex 4 (Unit 7 & 8)



The Library Retrofit Project Stage 1, 2 & 3– Budget Allocation of K9, 500, 000.00

Objectives:

To create a conducive learning environment for staff and students to have easy access to online materials as part of the Engineering program accreditation requirements.

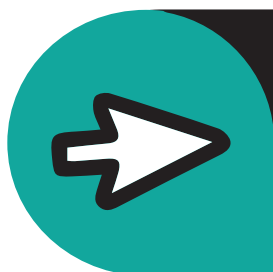
Physical Progress Status:

The Library Roof Retrofit is now 100% complete as of October 25, 2024. A total of 93% of the contract sum has been paid to date.

The Project Photos as of the 07th of November 2024



The Multi-Purpose Hall Project – Budget of K65, 000,000.00, PIP Allocated K13, 000,000.00

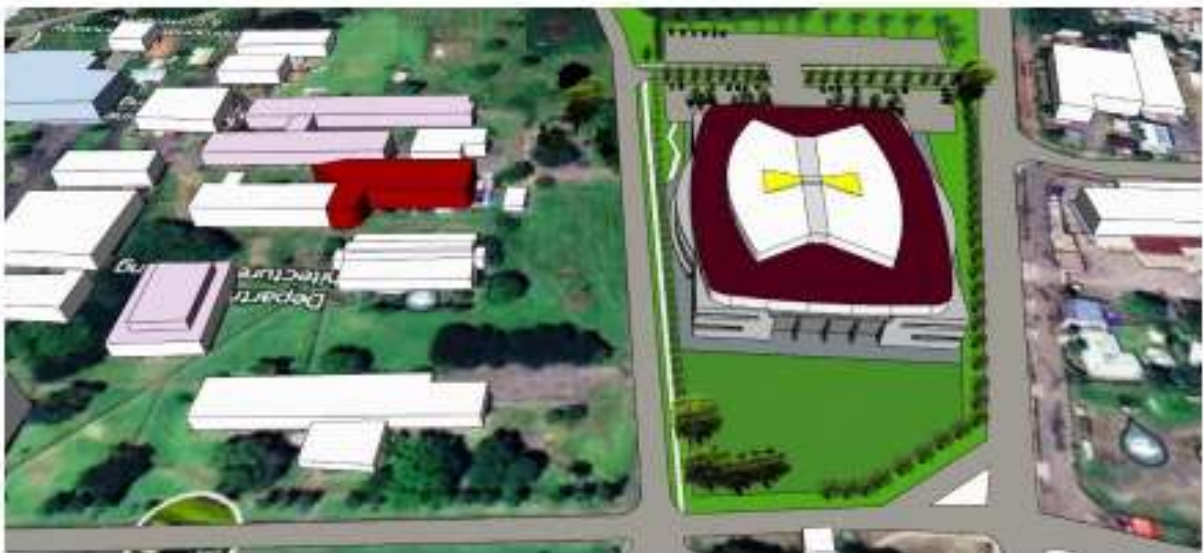


See Next Page

Objective:

The objective of this project is to construct a new multi-purpose hall for the PNGUoT to host its annual graduation ceremonies, as well as other essential calendar activities and events.

Aerial perspective of the Proposed Multi-Purpose Hall Project.



New 3D Images for New Concept Design



See Next Page

Examples of interior Lecture halls and tutorial rooms for staff and students.



PART B: ONGOING PIP PROJECTS UNDER THE PNGUoT INFRASTRUCTURE PROGRAM

The Ongoing PIP Projects that are funded under the PNGUoT Infrastructure Program are as follows:

The Dosimetry Laboratory Project – Budget Allocation K1, 700, 000.00

Physical Progress Status

The project was 100% completed on July 31, 2024.



The New Ambulance & Fire Truck Carport/Shed & Office & Transit Accommodation - Budget Allocation of K700, 000.00

Objectives:

To provide a shed for the PNGUoT Fire truck and ambulance, and also an extra office space and transit for the Security Office Department officers/drivers.

Physical Progress Status:

The Ambulance & Fire Truck Carport/Shed project's overall progress is approximately 60% complete as of December 13, 2024.

The Project Photos as of 13th of December 2024:



INFORMATION AND COMMUNICATION TECHNOLOGY SERVICES (ICTS)

Role(s) and function(s) of the ICTS Department in PNGUoT

ICTS Department of PNGUoT is fully in charge of the Internet, Server, Network (LAN, WiFi), 4G Mobile Network infrastructures, Student Computer Labs (Haus Europa, CALC), Staff/Student Google Workspace (Unitech Email), Active Directory Services, PNGUoT Website, .PG ccTLD (DNS) Management and Electrical Service Unit (ESU), including Campus Cable TV Service (CCATV), CCTV monitoring. ICTS is also responsible for ICT services provided at PNGUoT remote/satellite campuses, such as Bulolo and Simbu Unitech Satellite University (SUSU), and the Online Education ICT infrastructure (Moodle). Also ICTS is developing and managing many digital applications, such as Plagiarism Check (Turnitin), Student Database Management System (UNISIS, SRS), Conference Management System (EasyChair), HR Management System (iChris), Finance Management System (Attache), Helpdesk Management System (Manage Engine), Telephone Directory, Classroom Allocation (Timetable) System and University Website Management (Wordpress).



ICTS Staff Group Photo in front of Haus Europa

Achievements for 2024

There are several achievements in the year 2024.

For the Network Infrastructure, we completed the LAN upgrade from CAT5/5e to CAT6 Cables to all , schools, and the support division. Internet traffic is nearly two times more after our Primary Link, provided by PNG Dataco increased the capacity and migrated to the new PPC-1 Cable in August.

For the Application and Support, we achieved our home-grown Student Database Management system (UNISIS), launched version1 in November with Registration, Assessment (MER), and Finance modules.

For DNS operation, we achieved the Inaugural DNS Workshop and Forum in May, co-hosted with DICT and supported by ICANN and APNIC. Also, we reviewed the DNS Policy and started to implement the DNS Registry Automated System (Cocca).

Continues to attend Regional meetings (APNIC59) and International conference (ICANN79) with our partners, DICT and PNG Dataco.

Events and Conferences

- 2.1 Attend ICANN79 Public Forum, Puerto Rico (February, March)
- 2.2 Attend APNIC59, PacIGF, Pac ccTLD meetings, Wellington, NZ (September)
- 2.3 Organized Girls in ICT Day (April)
- 2.4 Organized Inaugural DNS Workshop and Forum (May)
- 2.5 Organized Hackathon Program (July)
- 2.6 Technical Assistance 7th National Science and Technology Conference (July)
- 2.7 Participate in Trukai Fun Run 2024 for PG marketing (July)
- 2.8 UNSW Team Visit (July)
- 2.9 Visitor from Kyoto Computer Gakuin School (KCG) in Japan (February)
- 2.10 Attend USAID-DCCP Workshop (November)

Infrastructure

- 2.11 Renovate and open new BIT Lab (August)
- 2.12 EMBA POM Campus PNG Dataco Fibre Expansion and LAN installation scope of work (December)
- 2.13 PNG Dataco Metro Fibre Expansion to TFTC, Buimo campus (October)
- 2.14 LAN Upgrade (Support Departments: Completed)
- 2.15 Back-up Server relocated from Mining Building to BUC (November)
- 2.16 Call for Tender 10Gbps Fibre Backbone Project (September)
- 2.17 Installation Redundancy Internet Service provided by Kacific (July)



Application

- 2.18 Implementation and Launch UNISIS version 1 (November)
- 2.19 Academic Timetable and Room Allocation System
- 2.20 SOET and AQUAT System (Academic Transcript online)

Operation

- 2.21 Purchase and distribution of Epson Projector with Mounting kit and HDMI cable to all classrooms/Lecture Theatre of Academic Schools (July)
- 2.22 Providing Telikom 20GB Data SIM (May to November) to Students, Teaching Staff (4300 SIMs)
- 2.23 Review Digicel CUG Contract and saving cost (around K2000/month: March)
- 2.24 Purchased and distributed 979 Laptops to new intake students (end of March)
- 2.25 Laptop Pay Deduction Scheme for staff (November)

Others

- 2.26 FARMAP Fibre Optic Training
- 2.27 Cyber Security Online Training (3/4 Staff Passed final assessment: October)
- 2.28 Organized NAIST Internship program (3x MCS students, November)

*Trukai Fun Run .
PG Marketing Event*



Problems and Challenges encountered and Recommendations for improvement

- Continued PNG Power Problem
- Damaged equipment due to continuous power failure/fluctuation
- Lack of Human Resources (Need to recruit ICT Business Manager)
- Need to have a proactive ICT PAC (Policy Advisory Committee) meeting quarterly.
- Continues to participate in Regional and Global Internet Conferences (APTLD, APNIC, ICANN, IGF, etc.)

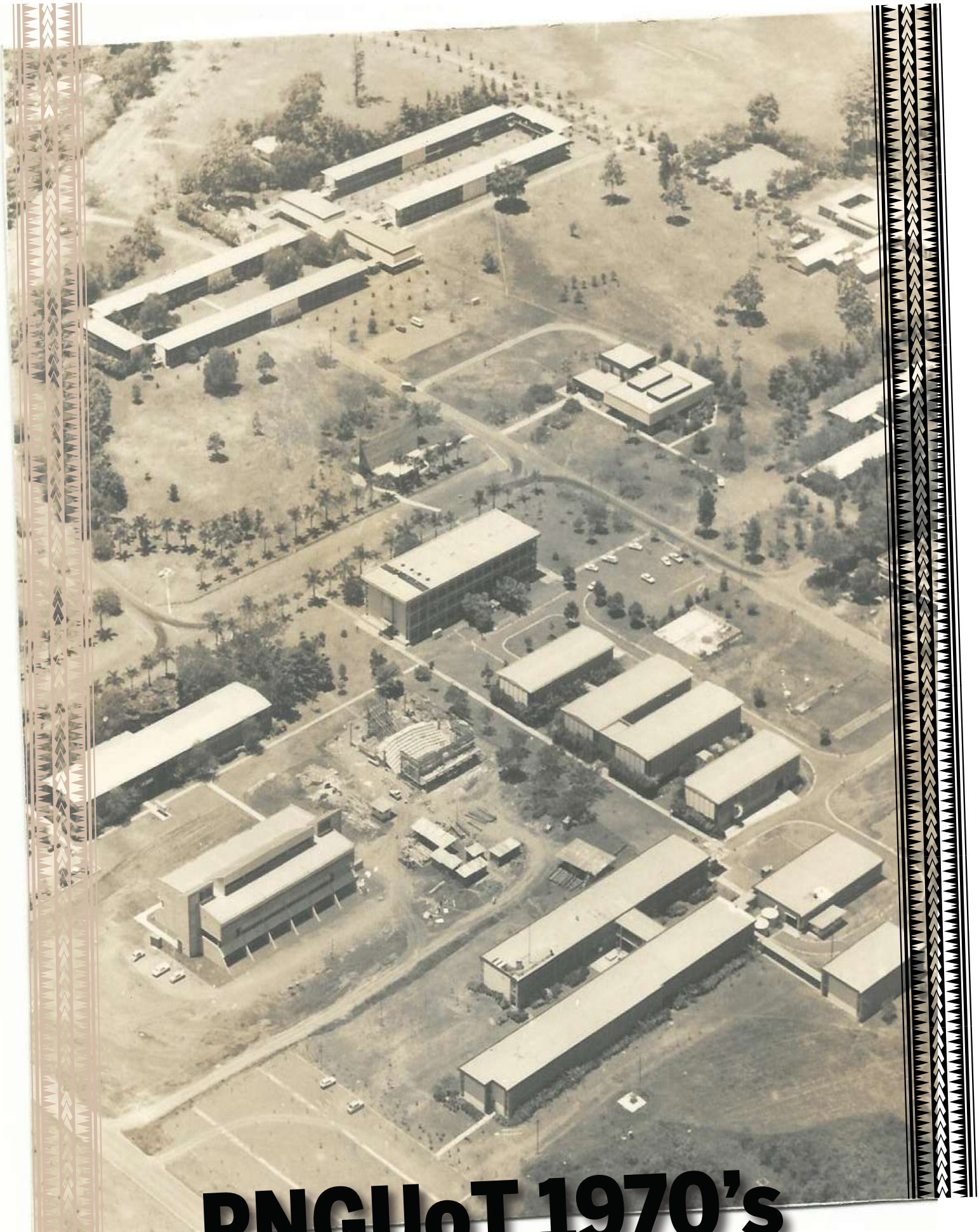
Way forward

Next year (2025), our priority area is to improve our Backbone Fibre Network, especially for the Academic Schools. Once that is completed, we can move on to the expansion of fibre into staff housing areas (Fibre to the Home: FTTH, Moonlight project), provided funding is available.

We will automate the .PG Domain Registry System, and after that, we will review .PG Domain Policy to submit to the July Council Meeting for endorsement with new Pricing.



Hackathon 2024



PNGUoT 1970's

UNITECH BIOTECHNOLOGY CENTRE

PREAMBLE

The Unitech Biotechnology Centre was established by the Council of the Papua New Guinea (PNG) University of Technology (PNGUT) in 1997 in recognition of the immense role that modern biotechnology could play in contributing to national development. Although it operates under the auspices of the School of Agriculture, it reports to the Office of the Deputy Vice Chancellor. Biotechnology is a powerful enabling technology, with applications that have the potential to revolutionize many industry sectors (including agriculture, forestry, fishing, pharmaceuticals and health, chemicals, textiles, food processing, environmental industries, energy, and mining). Appropriately, the current vision for the CEB that encompasses the nation's current developmental issues in the face of the changing climate is "to be leaders in the use of agricultural biotechnology to improve livelihoods". Hence, it strives to accomplish high quality research, training and development outcomes with an entrepreneurial characteristic that emphasizes the application of agricultural biotechnology in addressing issues associated with food and livestock production, forestry, and the environment in PNG.

Vision

An appropriate vision for the CEB that encompasses the nation's current developmental issues in the face of the changing climate is "to be leaders in the use of agricultural biotechnology to enhance agricultural development".

Mission

The CEB strives to accomplish high quality research, training and development outcomes with an entrepreneurial characteristic that emphasizes the application of agricultural biotechnology in addressing issues associated with food and livestock production, forestry, and the environment in PNG.

AREAS OF RESEARCH

The following research focus areas have been identified for staff and student research:

- Drought tolerance of promising rice varieties for Papua New Guinea
- Development of Trichoderma as a Biocontrol agent
- Development of entomopathogenic fungi for biocontrol of important insect pests.
- Development of Vesicular-arbuscular mycorrhiza to improve crop production
- Crop improvement and adaptation to stress environments caused by climate change
- Development of a maize seed system for PNG
- Gene discovery in PNG wild rice: seed
- Genetic transformations of taro and rice
- Development of fungal inoculum for artificial agarwood production in PNG
- Improving potato seed scheme.
- Tissue culture of local Orchid species.

AFFILIATED MEMBERS OF STAFF

No	Academic staff	School/ Collaborator*	Areas of research interest
1	Okpul, Tom, PhD	CEEB, Agriculture	Plant Breeding and Genetics, Biotechnology
2	Maino, Macquin, PhD	Agriculture	Plant Pathology, Nematology, Plant Viruses, Biocontrol Agents
3	Dotaona, Ronnie, PhD	Agriculture	Agricultural Entomology, Integrated Pest Management, Biocontrol Agents
4	Ban, Gwendolyn, PhD	Agriculture	Plant Pathology, Biocontrol Agents
5	Poloma, Spencer, PhD	Agriculture	Crop Physiology, Agronomy
6	Jeremiah, Haron, MSc.	Forestry	Eaglewood tissue culture
7	Inapo, Dollah, MSc (FPDA)	FPDA	Potato Tissue Culture
8	Totave Kamen, PGD	Agriculture	Orchid tissue culture

Fresh Produce Development Agency (FPDA)

POSTGRADUATE STUDENTS' RESEARCH

PhD

- Denano, Sogoing. Ecological Risk Assessment of Markham River and its Tributaries: A Case Study in Relation to Heavy Metals Contamination and Phyto-remediation.
- Maiguo, Eko. Investigating the Impacts of the Exotic Naturalized Samanea saman (Jacq.) Merr Trees in Old Gold Dredging Sites in Bulolo Valley, Morobe Province.
- Kewa, Nick. Value chain analysis of taro: the case of Markham District, Morobe Province, Papua New Guinea.

MPhil

- Gomuna, Naomi. S. Comparative Analysis of Food Safety and Phytosanitary Measures for Importing PNG Taro into Australia, New Zealand, Japan and USA.

MSc

- Mark, Warendo. Evaluating the ploidy level and drought tolerance of dasheen × eddoo taro hybrids

- ii Wawah, Lisahpo. Evaluating the ploidy level and drought tolerance of dasheen × eddoo taro hybrids. Graduate Assistance Scholarship. MSc. Program.
- iii Puring, Raylin. Evaluating the ploidy level and drought tolerance of dasheen × eddoo taro hybrids.
- iv Hannel, Godfrey. Agro-morphological characterization of the galip nut (*Canarium indicum*) population maintained at the NA RI-Kerevat Arboretum, East New Britain Province.
- v Robby, S. (PhD candidate). 'Incidence and distribution of leptospirosis in cattle population in the Morobe Province of Papua New Guinea.'
- vi Peter Aiyon, P. (MPhil candidate). 'Identification of Meloidogyne races (root-knot nematodes) using differential host test and molecular diagnosis.
- vii Sam, J. (MSc candidate). 'Insecticidal activity of biotoxin extracts from native entomopathogenic-associated bacterium.'

THIRD YEAR UNDERGRADUATE STUDENTS' RESEARCH PROJECTS

- i. Schneider, Naghan. Evaluating the efficacy of colchicine doses for generating tetraploid watermelons for seedless fruit production. School of Agriculture
- ii. Sitapai, Arthurnasia. Standardizing the Protocol for Regenerating Rice for transformation studies. School of Agriculture
- iii. Posing, Ernestine. Evaluation of media types for locally grown oyster mushrooms. School of Agriculture
- iv. Jacqueline Steven (Yr 3 Project). 'Incidence of black pod disease on 18 clones of cocoa. School of Agriculture
- v. Silih, Eronimus. Assessing callus Induction from leaf explants of the eaglewood, *Gyrinops ledermannii* Domke. School of Forestry.
- vi. Tobias, Niel. Examining in vitro callus induction on *Aquilaria crassna* shoots and seeds. School of Forestry.
- vii. Wesley Wilson. In vitro callus and shoot induction of *Cryptocarya massoy* by nodal culture. School of Forestry.

REPORTS

INTERNAL RESEARCH COLLABORATIONS

Ongoing: Wawah, L. & Okpul, T. (2024). "Evaluating the ploidy level and drought tolerance of dasheen × eddoo taro hybrids". Funded by the Postgraduate Studies, Research & Innovations Committee of the PNG University of Technology grant, K17,194.22.

Ongoing: Gomuna, N. S. & Okpul, T. (2024). "Comparative Analysis of Food Safety and Phytosanitary Measures for Importing PNG Taro into Australia, New Zealand, Japan and USA.". The Postgraduate Studies, Research & Innovations Committee of the PNG University of Technology granted K6,950.00 for this study.

Ongoing: Hannel, G. & Okpul, T. (2024). "Agro-morphological characterization of the galip nut (*Canarium indicum*) population maintained at the NARI-Kerevat Arboretum, East New Britain Province". Funded by the Postgraduate Studies, Research & Innovations Committee of the PNG University of Technology granted K15,770.00.

Ongoing: Mark, W. & Okpul, T. (2024). "Mark, Warendo. Investigating drought tolerance amongst promising dasheen and eddoo taro varieties from Papua New Guinea". Funded by the Taro Project Grant of K20,000.00.

Ongoing: Robby, S. (PhD candidate). 'Incidence and distribution of leptospirosis in cattle population in the Morobe Province of Papua New Guinea.' Financial support: PSR&IC Research Fund: K13,800.00.

Ongoing: Peter Aiyon, P. (MPhil candidate). 'Identification of Meloidogyne races (root-knot nematodes) using differential host test and molecular diagnosis. Financial support: PNG University of Technology Research Fund: K14,997.45.

Ongoing: Sam, J. (MSc candidate). 'Insecticidal activity of biotoxin extracts from native entomopathogenic-associated bacterium.' Financial support: PSR&IC Research Fund: K10,000.00.

ACQUISITION OF NEW EQUIPMENT

A "Nano Drop OneC Spectrophotometer" for Nucleic acid research at the Centre was acquired through the 1:1 co-funding arrangement offered by the Postgraduate Studies, Research & Innovations Committee Research Funds.

EXTERNAL RESEARCH COLLABORATION

1. ACIAR Small Research Activity (ACIAR CROP-2023-194): "Enhancing drought tolerance and food security in Papua New Guinea: the potential of new taro germplasm" Investigators: Campbell, B., Okpul, T., Smith, M. and Godwin, I. Partners: University of Queensland and PNG University of Technology. Grant: AUD 500,000. Period: 15th November 2023 to 31st January 2025. Extended to January 2026 with an additional funding of AUD165,000.
2. International Rice Research Institute. "Collection of wild rice in Papua New Guinea". Investigators: Okpul, T., Paofa, J., Pablo, A. C., Cope, A., and Ramaiah, V. Initial communication. Planned to start in July 2025.

SOUTH PACIFIC INSTITUTE FOR SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT (SPISARD)



Background of SPISARD

The South Pacific Institute for Sustainable Agriculture and Rural Development (SPISARD) was founded in 2003 at the Papua New Guinea University of Technology. It promotes sustainable agriculture and rural development through tailored extension methods, training, and technology transfer. The institute conducts research on food and cash crops, and livestock to improve farming practices, productivity and income while minimizing environmental impact.

Over time, SPISARD expanded its focus to include household food security, livelihood strategies, gender issues, resource management, health, education, water supply, sanitation and more. The institute employs a model village approach for research, training, and extension, involving the target population, communities, students, and academic staff. This approach ensures real-time feedback and a participatory process, with activities conducted in model villages across various agro-ecological zones.

Vision

The Institute envisions itself as a dynamic leader in extension and sustainable agriculture development, providing lifelong learning and positively impacting rural communities in Papua New Guinea, Melanesia and the South Pacific Island Countries.

Mission

The Institute's mission is to advance 'Smart Villages' and enhance skills for rural development, foster collaborative action and learning through demonstration projects and centres, and encourage direct farmers' participation to improve farming systems, increase productivity, income, food security, while sustainably managing the environment.

Function

The functions include applied research, training, development of farm implements and post-harvest technology, extension services, market and agri-business information, technology transfer, policy evaluation, advisory services, promoting agricultural biodiversity, rice cultivation, aquaculture, agroforestry and traditional farming systems.

Introduction

SPISARD uses the Smart Village Model to implement its programs. There are five areas that the institute is focused on, and they are;

- i. Research and development
- ii. Teaching and training
- iii. Technology Transfer
- iv. Capacity building
- v. Monitoring and evaluation

Currently, SPISARD has active projects in four villages, which are the cocoa development project in Masandanai village, East Sepik Province and Tabaga village in Nebilyer District, Western Highlands Province, the inland fish farming project in Hamara, Oro Province and the bulb onion project in the Markham Valley. The Institute will continue to work with these villages to transform them into Smart Villages.

Funding

The Institute receives an annual budget of K100,000.00 from the university to support its outreach activities.

2024 Outreach Activities

Outreach activities carried out in SPISARD's Smart Villages are discussed in the following order;

- i. Hamara Village, Sohe District, Oro Province
- ii. Masandanai Village, Angoram District, East Sepik Province
- iii. Tabaga Village, Tambul-Nebilyer District, Western Highlands Province
- iv. Markham District, Morobe Province

A. Hamara Village, Sohe District, Oro Province

The inland fish farming project in Hamara village began in June 2023 with the construction of a breeder pond. Tilapia fingerlings were introduced into the breeder pond in December of the same year. The breeder pond served as breeding stock for distribution to individual households, who later dug their ponds to stock them with fingerlings. After two months of breeding, fingerlings were disseminated to farmers, 50 to each household. Seven months later, the ponds were stocked with table size Tilapia, which provided a good source of protein for the households.

In July of 2024, the SPISARD team took a trip to Hamara village for monitoring and evaluation of the fish farming project. More than 50 households have a fish pond. Of this population, over 30 households have live fish in their ponds.



Left–Right: Farmers' fish pond

In addition to that, an evaluation study was done on participants who attended the stock feed- making training in January 2023. A total of 12 people participated in the survey. These were some of the participants from Hamara alone.

The team also met with the village leaders to address some of the issues related to the training and innovation centre and fish farming before addressing the community members. Ownership and care for the training and innovation centre and theft of fish were the main issues. In the meeting, the community members were encouraged to take ownership of the training and resources centre as it is not just the caretaker's responsibility but everyone's responsibility. The youth were encouraged to participate in fish farming so that they would not go around stealing fish from other people's fish ponds.

B. Masandanai Village, Angoram District, East Sepik Province

Masandanai is a village located in the black waters of the Karawari. Clean drinking water is one of the main needs of the community; hence, a water feasibility study was conducted by Mr. Robert Kipong of the ATCDI in 2023.

In 2024, the team took a trip to monitor and evaluate the cocoa project activities as well as to gather comprehensive baseline data to understand the current socio-economic and environmental conditions of Masandanai Village. This information would inform future planning and intervention strategies under the SPISARD program.

The team also presented the Water Feasibility Study report, prepared by Mr Kipong, to the community leaders. This report would help the community to source funds from their political leaders as well as from other sources for a sustainable water supply system.



Acting Director for SPISARD, Dr Veronica Bue, presented the Water Feasibility Report to a Village Leader.

The team also revisited the Cocoa Budwood Garden, established by SPISARD in 2023 in collaboration with the East Sepik Cocoa Board. The purpose was to assess the condition of the seedlings and the impact of recent flooding in the area. Twenty-three cocoa clones that were inundated by flooding and were affected were to be replaced soon. These clones will be sourced from the East Sepik Cocoa Budwood garden in Wewak.

This visit builds upon previous efforts, including the establishment of the 2023 Cocoa Budwood Garden and the initial water feasibility assessment carried out in partnership with ATCDI. The outcomes of this trip contribute to the long-term goal of enhancing rural livelihoods and resilience in Masandanai Village.



Some of the cocoa trees in the budwood garden

C. Tabaga Village, Tambul-Nebilyer District, Western Highlands Province

Tabaga village is one of SPISARD’s outreach communities where cocoa farming is of great interest to the community. Positively influenced by climate change, cocoa trees are thriving in higher altitudes. Coupled with low labour input, farmers in Nebilyer are shifting from coffee to cocoa farming. It was identified that there were some established cocoa farmers in the area who brought their produce to Lae to sell.

As a result, the SPISARD is working with Tabaga community to establish a cocoa budwood garden. The SPISARD team commenced work on the budwood garden in September of 2024, conducting site selection, block lining and planting of shade trees. Future developments will include the planting of cocoa clone varieties, training in budding and grafting, cocoa husbandry and management practices, and post-harvest processing of cocoa.



Left – Right: Coffee trees being cleared for establishing cocoa budwood garden.



D. Markham District, Morobe Province

The bulb onion project at Markham district is a partnership project between SPISARD and the Fresh Produce Development Agency (FPDA) in collaboration with Markham Smart Farmers Association Inc. Bulb onion farming training was conducted in Umisisian, Ragiampun, Ragidumpiat and Marayai. Training was successfully conducted at Umisisian, Marayai, Ragidumpiat and Ragiampun, however, Ragiampun training will be repeated this year, as towards the end of last year (December 2024), 70% of their seedlings in the nursery were destroyed by insect pests and disease.

Despite the challenges faced at other sites, Umisisian successfully harvested the onions and sold them at the farm gate. They have gone into the second lot of cultivation and are expected to harvest the second lot of bulb onions in June this year. Ragidumpiat and Marayai are also expected to harvest their second lot of onions and proceed to postharvest processes and sale of the same.

News of the success of bulb onion farming has spread far and wide in the Markham Valley, creating great interest in bulb onion farming amongst smallholder farmers. Farmers who have attended the training have also ventured into bulb onion farming at their expense using their customary land portions.



Left: Farmers preparing raised beds in the nursery. **Right:** Bulb onion seedlings growing in the nursery



Left – right: First harvest of bulb onion at Umisisian

Conclusion

SPISARD continues to achieve its objectives by reaching out to the communities with agricultural innovations. The highlight has been the harvesting of tilapia fish from farmers' fish ponds in Hamara and the successful harvest of bulb onions in Umisisian. SPISARD will continue to support these communities. With continued support from the University, the Institute is committed to working with villagers in rural communities to improve their farming practices and enhance their livelihoods, thereby raising their living standards.



ENVIRONMENTAL RESEARCH AND MANAGEMENT CENTRE

Background

The Environmental Research and Management Centre (ERMC), established in 1993, is mandated to conduct and manage research conducted by staff and students related to the environment. The ERMC has spacious laboratories equipped with key modern equipment for quantitative analysis of aquatic and terrestrial, food, pharmaceutical, and clinical samples for various purposes. In addition, ERMC has the Rainforest Habitat (RFH) for conserving, protecting, and managing PNG's endangered and rare biodiversity. Thematic research and management areas of the ERMC and RFH include but are not limited to biodiversity conservation, herbal medicine and natural product development, municipal and industrial wastes, natural resources (soil, plant, water, and microorganisms), built environments (civic infrastructure) and degraded environments (aquatic, terrestrial and air). The vision and mission of the center underpins these areas of research and management roles.

Vision & Mission

Our vision is to become a leading regional multidisciplinary research and development hub for the development of technocrats and scientists. We aim to promote and facilitate multidisciplinary problem-based research significant to environmental and climatic sciences, technology, and innovation.

Strategic goals

- a) To conduct technology-driven innovative research that would lead to broader community publicity and benefits,
- b) To mentor and train students to be equipped with advanced knowledge and skills in environmental and climatic sciences and allied fields,
- c) To provide scientific and technological advisory services to the government and the community, and,
- d) To promote innovative and entrepreneurial research that would lead to product development.

Board and Meetings

The ERMC board (RFH has its board) is comprised of the following:

- Chairman – PVC Academic.
- Dr. P. Michael, Executive Officer, Acting Director of ERMC.
- Prof. M. Maino – Member, Agriculture.
- Prof. T. Okpul – Member, Biotechnology Centre.
- Dr. L. Yalambing – Member, Applied Sciences.
- Dr. G. Anduwan, Member, Applied Physics.
- Dr. Jim Lem, Member, Mining Engineering.

The board met twice in 2023; the third meeting was not held due to a lack of quorum. Several key issues were deliberated, among them staffing (appointment of a full-time director, biologist, chemist, and grant writer), forming a research group by nominees from selected Schools (Agriculture, Forestry, Applied Sciences, Applied Physics, Mining, Civil, Surveying and Lands Studies and Architecture and Construction Management). Upgrading laboratory facilities and acquiring equipment were discussed at the board level, among other things (e.g., upgrading the website and furnishing the offices).





Staffing and development

The centre has one technical officer, an admin officer, and a female janitor. To effectively carry out the mandated responsibilities, the plan for the appointment of the following was made and recruiting:

- (i) Director – full-time appointment at professorial level,
- (ii) Scientific Officer – Environmental Chemist (recruiting),
- (iii) Scientific Officer – Terrestrial and Marine Biologist (recruiting),
- (iv) Scientific Officer – Biodiversity Conservation (recruiting),
- (v) Janitor – A male janitor.

The appointment of the full-time director at the professorial level with full teaching has been discussed and will be advertised in 2024. This is important for proper administration, consistency, and sustainability of implementations. The recruitment of a chemist, a biologist, and the RFH Manager are underway. A male janitor has been arranged with HR and is attached to ERM and the PG School. The board-approved organizational structure was discussed with HR as part of the University-wide restructure and will be submitted to DPM for establishment. A laboratory manager and a grant writer position are part of the structure. The only technical officer of ERM, Mr. Dominic Kia, was supported in doing a Master of Philosophy and is in the first year in 2024.

Research and Grants

More than fifteen collaborative projects were initiated and undertaken and were reported in the 2023 Annual Research Report. A short course, Certificate II in Project Planning and Management, was designed and written, and is taught online by the staff of ERM, the School of Agriculture, and the School of Civil Engineering. The course is part of the Global Green Growth Institute (GGGI) initiatives and is the sponsor. The current internal collaborators are the School of Agriculture, the School of Civil Engineering, and the School of Surveying and Lands Studies. The total research grants for all the projects, including the ongoing PNGRIS-2 Markham soil project, are over K700,000. Equipment grants totalling more than K500,000.00 were submitted too as part of partnership projects that are ongoing, proposed, and initiated.

Infrastructure

The Yufu Biang Building accommodates the PG School and ERM. It has deteriorated over the last 29 years and needs serious maintenance. The Estates and Services Department was consulted on the scoping and costing of the whole building. As per University policy, a plan is in place to get the maintenance work done by an external service provider through the Minor Works Committee. Minor refurbishment of the offices included upgrading the amenities (staff kitchen, conference room, and staff offices). The ERM is strategically positioned to train, conduct research, and contribute meaningfully to the community. Recruitment of key staff and acquisition of laboratory equipment continue to be the main challenges, which need to be addressed.



SUSTAINABLE ENERGY RESEARCH INSTITUTE (SERI)

The PNGUoT Sustainable Energy Research Institute (SERI) provides a collegiate environment for all Renewable Energy Experts at our University to come together, interact and carry out collaborative research and consultancy activities under one umbrella.

The Institute was founded in 2018 with a mandate to initiate, participate, collaborate and enhance PNGUoT staff and student-inclusive research activities in the area of sustainable (renewable and non-renewable) energy research, energy technology development and deployment, for the benefit of the University, our collaborators, the Government and People of PNG, and entire mankind.

SERI's yearly activities can be divided into three broad categories, viz, Research, Consultancy and Training.

Research

Due to the constraints of laboratory space, SERI (as an entity) is unable to carry out research in its own right. However, SERI initiates research concepts and sources of funding. This is passed on to Renewable Energy Practitioners in PNGUoT who are members of the Institute. The members conduct research in their respective schools and faculties. They are required to acknowledge the moral, logistical, and financial support received from SERI when presenting their reports in their various schools and departments.

SERI research and sustainability is therefore derived from the research and inputs of its members from various science and engineering schools and depts where the members are engaged either as technical or academic staff.

The list below does not include all research activities supported by SERI, but rather a few handpicked front-liners that were initiated and coordinated by the SERI Secretariat.

1. Designing a Power Theft Prevention Device: By Asu Malaki (AP Capstone project)
2. Agricultural Photo Voltaic Research (Ongoing research by SERI Secretariat in collaboration with other Universities overseas) The focus of this research is to encourage Solar Energy options that will not compromise rural PNG farmland reserved for food production. Conference participations include Kuala Lumpur and the paper publication titled "Adaptation of Agricultural Photovoltaic Technology for PNG Rural Household Energy Supply and Farm Land Preservation"
3. Multi-Hybrid Power system combining Hydro, Solar, Wind and Biodiesel (Ongoing research headed by Dr Shoeb Syed: HoD; Mechanical Engineering Department). With additional assistance from the PG School the research is in its second phase.

Consultancy and Training

Renewable Energy Training and Consultancy is the community engagement arm of SERI.

It is the primary income-generating activity of the institute. It has the potential to enable SERI to become a self-sufficient and self-reliant organization if the current tempo is maintained.

SERI members and officers spend a substantial amount of time sourcing (mostly from the internet) and submitting applications for Request-for-Proposals (RFPs) issued by international donors and banks. A successful bid will result in a Renewable Energy (RE) Infrastructure contracting and consultancy project for SERI and its members.

1. The main highlight for 2024 is working on the award to undertake an MSc program in Climate Change and Renewable Energy Access (grant by the UK Govt)
2. The second highlight is the installation and maintenance of a solar system at the PNGUoT Security office. (EU/UNDP)



SERI Renewable Energy (Solar Rooftop) training



EU/UNDP/SERI Solar training facility at PNGUoT

PNGUoT AGRICULTURE FARM



Introduction

The Agriculture Farm is a section of the School of Agriculture that functions as a field laboratory, facilitating practical teaching, demonstrations, research, and trials for both undergraduate and postgraduate students. The farm also generates income for the School of Agriculture through various livestock and crop products. Farm development and practices have been remodelled to enhance smart farming and sustainable operation, where other government institutions, community-based organization, community agricultural cooperatives and/or individual farmers access farming technology, farming management and sustainable farming concepts.

Vision

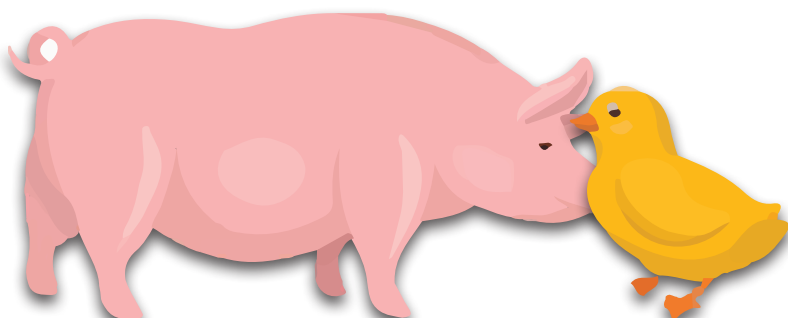
Promote Academic Teaching and Research Excellence and Maximization of Farm Income

Mission

Recapitalize and develop the Farm to realize Excellent Academic Teaching and Research and increase the Profitability of the Farm.

Strategic objectives

- * Promoting practical training, research and development in Agriculture
- * Establish sustainable production practices to enhance the profitability of the Farm
- * Integrating a model of Farming as a business
- * Shifting from conventional farming to smart farming concepts.
- * Facilitate the development of Agri-entrepreneurs training.





Farm Management Structure

PNGUoT Agriculture Farm is managed by a Field Laboratory Manager (Formerly Farm Manager) who manages all farm operations, programs and infrastructure improvement and development. There are two scientific officers; one officer is responsible for operations in the livestock section while another coordinates teaching and research activities and oversees activities in the crops section of the Farm. The Farm employed about 28 Farm Handymen who are allocated to all Units of each of the Farm's four Sections (Livestock, Crops, Teaching & Research and Farm machinery). The Farm STO reports to the Field Lab Manager, and the manager reports to the Head of School. The management team are qualified and experienced in their respective fields, overcoming many challenges in 2024 to effectively run the units to productive outputs.

Agriculture Farm as Field Laboratory

The Farm consists of four sections.

Teaching & research

The Farm facilitates teaching and research activities for both undergraduate and post graduate programs. Farm as Field Laboratory facilitates the following practical lessons and conducts practical trials as follows;

- (a) Undergraduate
- (b) Postgraduate
- (c) Scholarly research

Postgraduate research and trials in the field conducted in 2024 were, Masters and PhD & scholars are shown in the table below.

Level	Topic	Student	Supervisor
PhD	Green Manure integration as an INM option in sweet potato: effects on soil properties, crop nutrition and productivity	Paula Kaupa	Dr. Rajashekar Rao
Masters (MSc)	Crop cycle residue utilization for sweet potato farming	Topas Peter	Dr. Patrick Michael
	Investigating promising taro varieties for drought tolerance in Papua New Guinea	Wanrendo Mark	Prof. Tom Okpul
	Effects of mycorrhiza fungi on upland rice under field conditions	Napolen Kandi	Dr. Poloma
	Evaluating layer hens for molting using different post-moulting techniques	Laura Koroka	Dr. Janet Pandi
	Assessing the combining abilities of open-pollinated seed corn varieties	Raylin Puring	Prof. Okpul
Scholarly Research	Assessing pollination and growth of corn varieties	Scholar researcher	Prof. Okpul
	Investigating promising taro varieties for drought tolerance in Papua New Guinea	Scholar researcher	Prof. Okpul
Undergraduate	Potential of coffee pulp in animal feed (goat)	Lilyjean Awute	Mr. William Nano
	Taro beetle control with Tephrosia	Nadia Maria Solongo	Dr. Ronnie Dotaona
	Student practical on demonstration of budding techniques	BSCF3	Haron Jeremiah
	Seedless watermelon	Schneider Ngahan	Prof. Okpul
	Student group project on broiler production/management	BSAG3	Dr. Janet Pandi

Crops

Main activities of the crop section in 2024 were Cocoa, mainly concentrated on improving cocoa blocks with activities like shade tree control, cocoa tree pruning, cleaning shrubs and creeping weeds, removing fallen or rotten tree trunks and logs between cocoa trees. The farm has three cocoa blocks: Cocoa bud wood garden, mix production trees, and a newly established commercial cocoa nursery, and a fermenter with a drier. The two blocks are situated in a sewerage area and a rubber integrated block along Independence Drive.

Cocoa unit did well in 2024, with the following as highlight achievements.

Cocoa block Rehabilitation

There were cocoa trees covering almost 2ha within the campus where the Farm has embarked on improving by pruning, slashing and clearing grass, shrubs and logs. Removing overgrown shady trees for good sunlight and replanting new seedlings for missing trees.



Commercial Nursery

Establishing a cocoa commercial nursery and supply of clone seedlings was a milestone achievement of the Farm and School of Agriculture in 2024. PNGUoT Farm Cocoa Commercial Nursery attracted farmers from Enga, Western Highlands, Simbu, Madang, Markham and Huon Gulf Districts of Morobe. The farm also supplies seedlings to the Waria and Bulolo Districts, and many interested farmers enquire from other districts and villages in Morobe.

Through SPISARD, Farm's cocoa seedlings have reached Sepik, Tambul (WHP), Markham (Morobe) and Popondetta (Oro). A lot of enquiries on seedling supply and training, which SPISARD will ensure to meet farmers' training demand.

It was a successful year at the initial establishment of the commercial nursery, and it indicated the enormous potential driven by favourable changes in the cocoa dry bean market price. The nursery has the capacity to meet all the demand.

Apart from local farmers, other organizations also buy from the Farms nursery are;

- City Mission
- Outspan
- SPISARD
- Waif-Golfu
- Busu Secondary School



New cocoa commercial nursery



Since the cocoa price soared in 2024, cocoa production activity has increased, attracting many local cocoa farmers, organizations, schools, and community-based groups that were looking for cocoa seedlings.



Delivering cloned seedlings to a cocoa farmer at 41 Mile in the Markham Valley

Wafi Golpu Mining under the community empowerment program, bought out 45% (10,000 seedlings) of the raised seedlings. Wafi also distributed to mining area communities and locals along the mining pipeline.



Wafi Golfu's first visit to the cocoa nursery
The Program Manageress Sheila speaking to PNGUoT Media personnel

Cocoa solar dryer

The farm also produces cocoa beans and dries them using one of the solar drying methods, which was used as a trial to observe the drying process and quality of dried beans.



Solar cocoa drier (trial facility)

Live Stock Section

Livestock Section of the Farm has the following Units.

Piggery

Piggery consisted of breeding stock and growing stock. Some prolific breeds at the farm are: Large White, Duroc, Landrace and Hampshire. Farm piggery activities have intensified with a total of 30 breeders (sows & gilts) and 2 boars.

- * Breeders
- * Weaner/Growers
- * Finisher

Poultry

The Farm's poultry section consists of broiler chicken, commercial Layer and ducks. Poultry was identified as a potential unit to generate income for the Farm. Broiler with short turnaround production period has attracted focus and effort to increase broiler production ahead of the competition. Layer and ducks.

Broiler

The broiler production potential was there, but there was no facility or floor space to increase the stock. Firstly, Farm Team approached PNGUoT Mess and established an understanding of the Mess requirements; volume, sizes and buying price, etc.

Existing buildings on the farm have sufficient floor space, so we started to maintain, renovate, modify and extend. Open buildings were enclosed and sealed using materials from the Estate & Services Laydown storage yard, which secures almost 8000 birds' stocking capacity.

Broiler Day Old Chick (DOC) increased to 2000 chicks from 500 birds, the usual farm's stocking capacity. DOC Placement Plan allocated for 2000 DOC placements and 2000 slaughter per week.

Since the broiler commercial production started in September 2022 and continued through July 2023, a total of 87 400 chickens were raised, of which 72,000 chicks were reared and sold as live birds or slaughtered for Mess, while 15,200 chickens were growing at various ages at the moment.

Commercial Layers

This is another small unit with 500 layer birds that only produce 400 eggs daily, which is still under Teaching & Research.

Due to pressing egg demand, 4,500 commercial layer chicks will be imported from New Zealand in August 2023. The Stock Replacement plan is quarterly per year, should raise a total of 18 000 egg-laying egg chickens, which are estimated to produce 5.2 million eggs.

Ducks

The unit maintains some good prolific breeds like muscovy and true duck. Duck operation is another demanding unit with customers mostly of Asian origin who buy frequently. Breeding stock has increased, and hatches about 300-400 ducklings every month. The farm will soon process and pack fresh dressed ducks for customers.

Cattle

Farm targets were achieved in cattle operations in 2024, with a total of more than 20 animals. Currently has 21 animals from good herd management. **Pasture development**

The paddocks at the Farm have no proper or improved pasture. With sandy soil, pasture cannot survive during dry periods of more than two weeks.

Farm collected topsoil from building construction work within the campus and levelled it in the paddock. Improved pasture will be introduced and irrigated the grazing fields once the farm has its bore water running.

Improve Breeds

One of the important approaches in herd management 2024 was the replacement of a humped Brahman bull and cows of Angus/Brahman breeds. Also monitor and control bulls to ensure successful mating for successful calving.

Feed lot

Feed lot infrastructure development was delayed due to university cash flow issues in 2024. Looking forward to 2025. A feed lot is the solution for cattle feeding on farms. A lot of raw nutrients and agricultural by-product waste that can be converted to animal feed are available locally.

Sheep & Goat

More attention was on Sheep and goat breeding control. In 2024, Farms achieved its target to control inbreeding in both animals. Inbreeding was a common problem among their kind, causing a significant gap in essential characteristics, particularly the conversion of roughage to meat and growth rate.

Basic male management by castration of the scrotum for all male animals has avoided inbreeding and has enhanced the breeding male effectiveness in mating every cycle.

Farm development, Products & Services

The table below shows some development, products & services in 2024.

Farm Office Improvement



New chicken shed: 68 x 11m shed completed and raised chicken throughout year 2024



Reefer container

A reefer container was bought and arrived for cool storage.



Table Eggs

- Commercial Layer into production (laying Eggs)
- Farm supply 60Ctns per week to Mess



Live pig

- Live pig sales are peaking up with customers coming daily.
- Live pig sales by 50kg liveweight @ K20/kg



Pork pack trays

- Farm continue butchered and process pork trays for customer and is picking of demand on dressed pork



Live Sheep & goat

- The farm increased sheep & goats with 2 x new breeding male goat & sheep.
- Control breeding to avoid inbreeding.



Ducks

- Demand for duck is high and the stock was increased



Live cattle

- The cattle herd increase from 21 heads
- Beef will be processed and supplied to the Student Mess with beef dice to start with.



Future development

The following are lists of potential development;

- * New Hatchery – Structural drawing discussion and finalized with Supplier representatives who visited from Australia..
- * 1 X 68 x 11m new Commercial Layers Shed.
- * 1 x 65 x 11m new Broiler Shed.
- * Stock feed ingredient storage shed.
- * Cattle Stock yard.
- * Cattle Feedlot.
- * Duck & Aquaculture integrated development (increase duck population, fish and pond pending)
- * Piggery breeder shed renovations and new weaner/grower shed (delayed awaiting layer shed to complete)
- * Cocoa Nursery (established and operating)
- * Cocoa Drier (Trial on solar drier)
- * Unitech Arborator (pending pig grower shed)
- * 1 X Glass House.
- * Biogas plant (trial WIP with the collaboration of ATDCI)
- * Farm Staff Housing.
- * Paddy/upland rice field development.
- * Biosecurity and quarantine (enforced)
- * Farm Office renovations (completed and used)
- * Feed ingredient storage shed (delayed)

*Kaikai i kamap lo
grau
na*



gaden

Statutory/Regulatory compliance

- * As PNGUoT Agriculture Farm is producing food to feed Students and other public consumers, work is in progress to meet the statutory requirements of the following;
- * HACCP Certification
- * Bio-Security Requirement
- * Environment - CEPA

The National Institute of Standards and Industrial Technology (NISIT) Team conducted a GAP Visit that assisted the Farm Team to work on other areas of documentation. Documentation towards HACCP Certification is WIP. However, to fast-track the process, a qualified HACCP Professional has to be engaged to complete the certification of the HACCP Application.



STUDENT SUPPORT & FACILITIES CENTRE

Purpose of the Existence of SS&FC:

- * for the social welfare needs of the students at all levels by providing, maintaining, and managing facilities and support services relating to the students' welfare.
- * Students' facilities and Support Services are provided and managed under the respective sub-sections, which are briefly described in this brief document by way of assessment.

Subsections and Activities

We perform our roles under two basic subsections: Students' Facilities and Students' Support services.

STUDENT FACILITIES

Under the Student Facilities, we manage and have custody over the following facilities: **Dormitories & Halls of Residence**

SS&FC manages the *student dormitories* for:

- * allocation of rooms (Beginning of the Year)
- * maintain and upkeep through a contractor as well as through the PNGUoT maintenance section.
- * facilitating student clearance at the end of the year, including transport arrangements for drop-off at the airport.

SUMMARY OF DORMITORIES AND BED SPACES

Facility Owner	Bed spaces		No. of Dorms
	Male:	Female:	
PNGUoT	1239	506	39
			09
SDA College	76	76	1
			1
Catholic College	25		01
			01
	100	100	01
			01
Total	2122 (1440 males + 682)		53

- * The TESAS sponsored students are given priority in allocating the rooms at the PNGUoT owned dormitories. Whatever is left is allocated to the self-sponsored students.
- * In many cases self-sponsored students are sent to the private owned accommodations, like the SDA College, The Catholic College and the AOG Okari campus.
- * There are only two dormitories for the Postgraduate dormitories: one with 41 bed spaces for females and the other 41 bed spaces for males.
- The challenges we experience every year:
 - Inadequate dormitory spaces to cater for both male and female students on campus.
 - Inadequate funds for dormitory maintenance and repair in preparation for the next academic year.
 - Unable to accommodate more self-sponsored students on campus, hence the referral of them to UARC and Okari campuses. Some even rent their own accommodation outside of the campus amidst security risks.
 - Inadequate dormitories for our Postgraduate students

Students Mess:

The current Mess is operated by Unitech Enterprises Limited (UEL) through its own Catering Company (Unitech Catering Services) we grant students access to the Mess through room allocations (Tenancy Agreement Forms – TAFs). We maintain surveillance in the Mess and ensure the Catering staff prepare healthy meals.

- The new Mess is expected to be completed by June, 2025.

The Challenges encountered at the Mess by students:

- The quality of food is not really to the standard at this time.
- There is NO fixed menu for the preparation of meals.
- There is less quantity of the same protein cooked at dinner time and so the Chef serves canned fish and sausages.

Sports & Recreational Facilities

- Sporting Facilities: monitoring and managing playgrounds and courts in terms of their usage (including the hire) for various sporting events. The Sports policy that guides the organization and conduct of sporting activities on campus.
- A gymnasium will be set up by June of this year when the new Mess is opened and our building is freed up for this purpose.

Christian Center (CC): Manage and schedule Christian fellowships for various denominations on campus and charge a fee for its usage. The Christian Center is open for both staff and students spiritual well being and development.

Union Board

- * Manage the Driving School for beginners (both students, staff and corporate clients), TPlay school for children, Bus Shuttle for students, staff and dependents pickup/drop-off,
- * Union Shop, a Coffee shop (Kaibar) for staff and students, where they can pay for breakfast, lunch, and dinner.
- * Kiosks for mobile phone services (Digicel, Telikom and Voda fone)

STUDENT SUPPORT SERVICES

Under our Students support function,, we conduct various activities to keep our students engaged throughout each academic year. There is a variety of activities for the primary purpose of character and attitude building, fostering and instilling respect and discipline as they pursue their studies to become 'world-class technocrats for the real world'.

Conducting Awareness and Engagements with Residential Students

- Team SS&F, the Unitech Medical team, and the Security personnel do Awareness to students: acceptable behaviours, security and Health issues within all the clustered dormitory areas.
- Team SS&F also does awareness on the same issues at other locations where our students reside: AOG Okari campus and UARC campus within the PNGUoT campus

Counselling Services

There has been an increase in the number of counselling cases since:

1. The male counsellor relocated from the main SS&F office to our Operations Centre within the male dormitory area.
2. The recruitment of our Female Counsellor two years ago is now causing female students to go for counselling on psychological and social issues that are affecting them.

The challenge is that NOT many students are coming for Counselling. The reason for this trend is not known, even though we publicise the availability of such a service provided by SS&F.

2.4 Inspire Leaders Seminars

Two leadership seminars were conducted by one of our former students. He is known for the series of seminars and Inspirational speeches that he delivers to the younger generation of today.

Such seminars, coordinated and facilitated by Student Support Services, are beneficial for students to have a vision and purpose in life to overcome daily challenges and focus on their ultimate goal of graduating and contributing to nation-building.

Participants of the Inspire Leadership Seminar 2.5



Military Bootcamp

SS&F negotiated and facilitated for a Military Bootcamp which was conducted on the first semester break, from the 03rd to the 07th of June, 2024. The Bootcamp was made possible and conducted by the Joint Forces Academy at the Igam Army Barracks, where they are located. The Bootcamp was conducted by 30 Army personnel from all ranks: from Lieutenant Colonel to Corporal. The main objective of the Bootcamp was to instil discipline into the young minds who are the students of this university.



Rope Climbing using both hands and legs. VC presenting a Boot Camp student with his Certificate of Participation.

For 2025, negotiations and meetings are underway now. We plan to deliver two batches in two separate Bootcamps (one week apart) from the 09th of June, 2025.

Revival of Unigames

The Unigames (formerly known as the NUS Games) were revived in 2024. The DR-SS&F

and the Sports Office worked hard to restore this sporting activities after it was dropped due to a lot of political influence. PNGUoT was instrumental in having the name changed and eventually organized the two events (soccer and basketball) to kick-start the games.



Soccer Team in action



PNGUoT Basketball Team in action

Vice Chancellor's Cup (VC Cup) - 2025

Vice Chancellor Cup is a prestigious rugby league tournament that draws male teams from various Universities across the country. The tournament, held every two (2) years sees an influx of university rugby teams playing against each other and showcasing their rugby league talents and the potential to play in other semi – professional leagues and competitions.

2.8 Hausman Talk Series

With a primary aim of causing some behavioural changes in our students, especially the male ones, SS&F is hosting a series of talks called the **“HAUSMAN TALK series”** of inspirational and motivational talks. The idea of the Hausman Concept is to instil moral values and encourage ethical standards which was typically taught in a traditional PNG Hausman setting, but contextualize it in a more modern setting for today's generation.

**Professor Macquin Maino
Presenting during
Session#1 of the Hausman
Talk in 2024.**



The Voice International Incorporate (TVI)

- PNGUoT has a current MOA with TVI for the purpose of facilitating its programs for the benefit of our students
- Programs like CLEANGEN and DREAM CAMP and many more will soon be facilitated by TVI for the purpose of grooming our students to live meaningful and purposeful lives, both here and beyond PNGUoT.



**Draft Annual Financial Report
(Un-audited)**

Financial year ending 31 December 2024



The Papua New Guinea University of Technology
Annual Financial Report for the year ended 31st December 2024
(Un-Audited)

The University Council's Report
Statement of Comprehensive Income
Statement of Financial Position
Statement of Changes in Equity
Statement of Cash flows
Notes to the Financial Statements



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

The University Council's Report

The University Council take pleasure in presenting their annual report on the affairs of University of Technology ("the University") including Financial Statements for the year ended 31 December 2024.

Principal purpose and activity

During the financial year, the principal activities of the University is that to provide tertiary education to students through their 13 academic departments and three affiliated colleges and in accordance with the Policies and Procedures set out by the Office of Higher Education Department. The details are as set out in note 1 to the financial statements.

Results

The total comprehensive deficit for the year was K 36,451,143: (K 19,050,621).

The University registered 3,416 (2023: 3,215) students and 825 (2024: 747) were graduated.

Department	Students		
	2024	2023	2022
Agriculture	195	164	169
Applied Physics	202	192	169
Applied Science	206	204	192
Architecture	195	212	205
Business Studies	730	653	624
Civil Engineering	198	191	194
Communication Studies	179	184	171
Electrical Engineering	245	224	232
Forestry	162	115	109
Lands & Surveying	371	345	302
Maths & Computer Science	186	156	137
Mechanical Engineering	187	202	219
Mining Engineering	205	211	200
	3,261	3,053	2,923
Amalgamated Colleges			
Bulolo University College	100	110	120
Timber and Forestry Training College	55	52	35
	155	162	155
	3,416	3,215	3,078
Financial Results	2024	2023	2022
Grants from Government	66,997,822	77,002,828	79,778,266
Student Fees & other income	40,080,446	33,630,567	31,835,312
DHERST Subsidy	8,151,476	8,463,068	6,944,222
	115,229,744	119,096,463	118,557,801
Personnel expenses	(82,832,537)	(73,523,247)	(65,723,586)
Operating expenses	(49,262,773)	(47,523,649)	(43,399,810)
Depreciation & tax penalty expenses	(19,585,577)	(17,100,188)	(16,826,138)
	(151,680,887)	(138,147,084)	(125,949,534)
Deficit before other comprehensive income	(36,451,143)	(19,050,621)	(7,391,733)

Donations

The University made donations of K nil (2023: K nil).

Interests register

There were no transactions recorded in the interests register for the year.

Council Members

The members of the Council to the University during the year were;

Name	Current status	Date of appointment
Mr. Sam Koim	Chancellor	02/08/2024
Mr. Paul Komboi	Member	02/08/2024
Mr. John Byrne	Member	02/08/2024
Mr. David Masani	Member	02/08/2024
Ms. Finkewe Zurecnuoc	Member	02/08/2024
Ms. Florence Willie	Member	02/08/2024
Prof. Ora Renagi	Member	02/08/2024
Prof. Tom Okpul	Member	02/08/2024

Senior Executive Management

The Senior Executive Managements at the date of signing the report of the University are and during the year

Professor. Ora Renagi	Vice Chancellor
Dr. Garry Sali	Deputy Vice Chancellor
Professor. Kaul Gena	Pro Vice Chancellor (Administration)
Professor. Shamsul Akanda	Pro Vice Chancellor (Academic)
Mrs. Veronica Thomas	Registrar
Mr. Diraviam Tharmaraj	Bursar
Mrs. Annette Waide	Executive Director (HR)

There is no material interest in any contract or arrangement with the University during the year. Senior Executive Management remuneration are as set out in note 20.

Contingent liability

No contingent or other liability has become enforceable or is likely to become enforceable within the period of twelve months after the end of the financial year which, except as disclosed in Note 22, which in the opinion of the members, will or may substantially affect the ability of the University to meet its obligations as and when they fall due.

Registered office

Portion 453, Area 223.1 Taraka Campus, Private Mail Bag, Lae Morobe Province, Papua New Guinea

Subsequent events

No subsequent events occurred during the reporting date.

General

At the date of this report, the University Council is not aware of any circumstances which would render the values attributed to the assets and liabilities in the accounts misleading or inappropriate.

For and on behalf of the PNG University of Technology Council.

Signed at Lae, on the day
of 2025.

Professor. Ora Renagi

Vice Chancellor

Mr. Diraviam Tharmaraj

Bursar

Declaration of the University Council

The University Council declare that:

- a) In the Council's opinion, there are reasonable grounds to believe that the University will be able to pay their debts as and when they become due and payable; and,*
- b) In the Council's opinion, the attached financial statements and notes thereto are in accordance with the Finance Instructions issued under the Public Finances (Management) Act 1995, including compliance with accounting standards and give a true and fair view of the financial position and performance and cashflows of the University.*

Additional Statutory Information

- a) The results of the University's operations during the financial year have, in the opinion of the Council, not been materially affected by items of an abnormal nature, other than those disclosed in the financial statements.*
- b) In the opinion of the Council, no circumstances have arisen that make adherence to the existing method of valuation of assets or liabilities of the University misleading or inappropriate.*
- c) No contingent liability has arisen since the end of the financial year, which continues to exist at the date of this report, other than those, disclosed, in the financial statements.*
- d) At the date of this report the Council are not aware of any circumstances that would render the values attributed to current assets in the financial statements misleading.*
- e) No contingent liability other than that disclosed in the notes to the attached financial statements has become enforceable, or is likely to become enforceable, within a period of twelve months from the date of this report, that will materially affect the University in its ability to meet obligations as and when they fall due.*

Signed in accordance with a resolution of the PNG University of Technology Council, at Lae,

the _____ day of _____ 2025.

*Prof. Ora Renagi
Vice Chancellor*

*Mr. Diraviam Tharmaraj
Bursar*



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Income Statement

For the year ended 31 December 2024

	Notes	2024 K	2022 K
INCOME			
Government Grants	4	66,997,822	77,002,828
Student School Fees	5	30,848,869	26,705,290
DHERST Subsidy	5	8,151,476	8,463,068
Other Income	6	4,756,467	3,890,469
Gross Profit from Commercial Activities	7	4,475,110	3,105,786
Total Income		115,229,744	119,167,440
EXPENDITURE			
Employment costs	8	82,832,537	73,523,247
Tax penalty expense		4,036,634	3,902,063
Operating Expenses	9	44,474,185	41,614,481
Other Operating Expenses	10	4,788,588	5,909,168
Depreciation Expense	11	15,548,943	13,198,125
Total Expenditure		151,680,887	138,147,084
Profit before other comprehensive income		(36,451,143)	(18,979,644)
Other comprehensive income			
Gain arising from asset revaluation		-	183,527,803
Total comprehensive surplus (deficit) for the year		(36,451,143)	164,548,159



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Statement of Financial Position

As at 31 December 2024

	Notes	2024 K	2023 K
ASSETS			
Current Assets			
Cash and Cash Equivalents	12	38,182,402	47,899,061
Interest bearing deposit	12a	9,962,240	13,954,030
Trade and other receivables	13	8,789,688	10,003,408
Inventory		882,522	842,206
Total Current Assets		57,816,852	72,698,705
Non-Current Assets			
Property, Plant and Equipment	14.a	644,167,872	643,801,387
Investment Property	14.b	3,613,333	3,942,690
Total Non-Current assets		647,781,206	647,744,077
TOTAL ASSETS		705,598,058	720,442,782
LIABILITIES			
Current Liabilities			
Trade Creditors	15a	21,000,760	15,490,848
Other Payables	15b	28,382,936	21,250,475
Tax Payable	16	2,420,798	2,457,073
Employee Provision	17	10,547,800	9,374,131
Total Current Liabilities		62,352,294	48,572,527
Non-Current Liabilities			
Deferred Income		85,234,280	81,549,630
Employee Provision	18	11,778,170	12,207,028
Tax Payable	16	136,301,480	131,730,620
Total Non-Current Liabilities		233,313,931	225,487,278
TOTAL LIABILITIES		295,666,224	274,059,805
NET ASSETS		409,931,834	446,382,977
EQUITY			
Accumulated Deficit		(183,033,747)	(146,582,604)
Asset Revaluation Reserve		584,657,615	584,657,615
Capital reserves		8,307,966	8,307,966
TOTAL EQUITY		409,931,834	446,382,977

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Statement of Changes in Equity

As at 31 December 2024

	Capital Reserve	Asset Revaluation Reserve	Retained earnings	Total
	K	K	K	K
Balance at 1 January 2023	8,307,966	401,129,811	(127,602,960)	281,834,818
Prior year adjustment	-			-
Surplus/(Deficit) for the year			(18,979,644)	(18,979,644)
Gain on Revaluation	-	183,527,803		183,527,803
Balance at 31 December 2023	8,307,966	584,657,615	(146,582,604)	446,382,977
Surplus/(Deficit) for the year	-		(36,451,143)	(36,451,143)
Gain on Revaluation		-		-
Balance at 31 December 2024	8,307,966	584,657,615	(183,033,747)	409,931,834



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Cash Flow Statement

For the year ended 31 December 2024

	2024	2023
	K	K
Opening Balance as of 01.01.2024	61,853,091	64,540,128
Cash inflow		
Grant	63,512,967	71,748,234
DHERST	8,151,476	8,463,068
Debtors (realised from students)	32,062,588	25,915,794
PIP Grant	1,100,000	10,700,000
Incentive Fund	2,477,023	3,362,712
Other Income	9,231,577	6,996,254
Total Inflow	116,535,631	120,460,638
Cash outflow		
Salaries & Wages	82,079,211	71,226,984
Payment to Suppliers & Service Providers	31,542,839	37,316,042
Purchase of Assets	3,959,137	14,604,649
Work-in-Progress (Payment to Contractors & Suppliers)	12,662,893	
Total Outflow	130,244,080	123,147,675
Closing Balance as of 31.12.2024	48,144,643	61,853,091



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Notes to and forming part of the financial statements for the year ended 31 December 2024

4. Government Grants

	2024	2023
	K	K
Government Grants -Recurrent	63,312,967	71,348,234
PIP Grants	248,575	286,778
Government Grants -Utilities	3,236,280	4,967,816
Other Government grant	200,000	400,000
	66,997,822	77,002,828

5.a Student Income

Tuition Fees	13,083,148	13,169,461
Online	2,853,138	536,917
DODL Fee	3,726,630	4,032,048
Board and lodging fee	3,009,939	2,095,518
Compulsory fee	6,252,446	5,293,389
Laptop Fee	1,923,568	1,577,956
	30,848,869	26,705,290

5.b Boarding & Lodging Subsidy

DHERST Subsidies	8,151,476	8,463,068
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6. Other Income

Rental income	1,784,841	979,843
Service fee	-	9,125
Other grants receipted	57,087	120,348
Training fees	248,795	286,212
Consultancy fee	118,000	63,069
Interest income	270,260	247,839
Royalty from Datec	682,604	490,195
SRC Union Fee	222,093	189,920
Clinic Fee	612,774	597,872
Other miscellaneous income	740,015	906,047
	4,756,467	3,890,469

7. Gross Profit From Commercial Activities

Income from sales and service rendered	10,433,876	8,838,605
Less: Cost of sales	5,958,766	5,732,819
Gross profit	4,475,110	3,105,786

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Notes to and forming part of the financial statements for the year ended 31 December 2024

8. Employment costs	2024	2023
	K	K
Salary and allowance	54,084,748	46,451,487
Wages and allowance	9,370,029	8,757,444
Gratuity costs	8,269,833	6,596,829
Leave fares	3,562,807	3,433,115
Superannuation contribution	4,040,761	3,570,153
Annual leave	1,182,184	1,268,802
Long service leave	(428,859)	1,027,461
Training Expenses	888,410	748,202
Other staff related costs	1,862,622	1,669,754
	82,832,537	73,523,247
9. Operational expenses		
Student messing expenses	8,674,207	9,495,323
Water charges	4,143,717	3,820,865
Electricity charges	3,584,604	3,661,116
Internet expenses	3,053,210	2,237,700
Consumables	2,976,061	3,654,583
Meeting/Seminar/Conference	270,772	413,459
On-line Course Expenses	472,659	209,266
Externalisation and SUSU Expenses	113,031	145,526
Repairs and maintenance - Properties	6,116,032	4,955,257
Repairs and maintenance - Equipments	2,437,403	1,746,935
Student laptop	2,938,468	2,465,568
Travelling expenses	2,746,079	2,432,900
Vehicle hiring expenses	363,104	312,778
Transport Maintenace	616,495	609,771
Fuel expenses	1,328,308	1,484,159
Stationary expenses	444,974	463,462
Postage & Telephone	156,885	157,514
CUG Phone	210,443	214,529
VC Discretionary fund	171,729	317,874
Research expenses	591,510	856,819
Events/Conferences	122,044	100,051
Acreditation Expenses	988,909	433,497
Other Administrative Expenses	1,953,541	1,425,530
	44,474,185	41,614,481
10. Other expenses		
Other Operational Cost	483,463	332,861
Audit Fees	21,505	110,000
Bad Debts	-	492,037
Consultants Fees	3,045	4,880
Insurance	724,130	648,405
Bank Charges	72,204	59,492
Legal Fees	229,761	507,997
Other Security Expenses	476,239	555,112
Registration & Renewal	46,736	40,449
Rental	56,423	51,552
Assets Write off	6,169	444,291
Clinic Expenses	1,088,575	959,803
Miscellaneous	1,580,337	1,702,289
	4,788,588	5,909,168

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

*Notes to and forming part of the financial statements for the year ended
31 December 2024*

12. Cash and Cash Equivalents

	2024	2023
	K	K
Main Bank A/c - BSP 1000386580	4,248,826	832,989
Mess Bank A/c - BSP 7017972501	17,924	(24,435)
School Fee Account: 1000386581	315,483	533,536
Stat-P Bank Account	1,049,155	1,468,302
MCDC Cardholder 7008191970	172	172
MCDC Cardholder 7011649576	3,124	1,426
PIP Project BSP 1002661773	26,740,668	35,796,364
BSP Bank Account DOD 1-603660	543,104	4,193,982
Housing A/c - BSP 7010630858	470	470
SERI Account	397,895	369,081
BSP _ Incentive Fund	2,137,947	577,528
BSP _ BUC	136,983	165,124
Union Board	51,938	23,563
BSP _ TFTC	147,269	129,347
Kina _ TFTC (ACIAR Projects)	12,784	15,690
BSP 1000386086 _ Play School	3,674	9,203
Kina Bank _ Trust Bank Account	1,307,063	364,811
BSP _ Trust Bank Account	609,192	3,312,384
ATCDI	306,505	39,430
BSP _ UDC	106,718	74,063
Undeposited Fund	14,337	-
Petty Cash	28,733	16,031
EFTPOS Cash Out	2,440	-
	38,182,402	47,899,061

12a. Investments in Interest Bearing Deposits

Interest Bearing Deposits are placed with financial institutions with interest ranging from 0.08% to 1.5%. It's a short term deposit held with Bank of South Pacific (BSP) with term of maturity less than 3 months and as such has been included as part of cash and cash equivalents.

	2023	2022
	K	K
Bank South Pacific Ltd	9,962,240	13,954,030

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Notes to and forming part of the financial statements for the year ended
31 December 2023

13. Receivables

Trade Debtors	10,255,224	7,640,224
DHERST Receivables	1,118,354	5,021,445
Receivables - Debtor	1,762	-
Staff Debtors	6,553	3,547
Staff Salary Advance	18,920	19,972
Air Niugini UATP account	39,901	9,005
Other Sundry Debtors	37,818	37,824
Receivable from NATSL	1,114,553	1,114,553
NAL Debtors	35,048	35,048
Loan-Unitech Enterprise Ltd	144,729	223,979
Other Receivables	530,287	549,011
Prepaid Expenses	429,030	283,380
	13,732,179	14,937,987
Less: Provisions for doubtful debts	(4,942,491)	(4,936,391)
	8,789,688	10,001,596



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Notes to and forming part of the financial statements for the year ended 31 December 2024

	2024 K	2023 K
15. Creditors and other payables		
a. Trade Creditors :		
i. Suppliers of Goods & Services	7,793,620	6,444,465
ii. Suppliers of Utilities	13,207,140	9,046,383
	21,000,760	15,490,848
b. Other Creditors		
Students Credit Balance and Advance Payment	17,589,738	13,156,106
Contractors Retention	1,946,454	1361123.76
NATSL Clearing	20,154	20153.98
Superannuation contribution	40,239	30,541
Gratuity payable	1,642,314	1,135,633
Payroll clearing	361,452	226,393
Accrued Expenses	1,525,988	1,125,429
Contractor Payable	37,864	37,864
Aptitude Test Clearing A/c	1,129,154	925,679
School Fee Packaging Clearing A/c	486,451	407,556
OHE Trust A/C	256,451	89,013
H.E.L.P Clearing A/C	1,247,194	1,615,796
Other accrual	2,099,485	1,119,188
	28,382,936	21,250,475

16. Tax Liabilities

As a state-owned institution, the PNG University of Technology depends on the Government Grant for its operations. But it was under funding until 2019 and PNG did not receive its Personnel Emolument Budget. This has caused severe cash flow problems for the University and prevented it from paying salaries & wages tax to the Internal Revenue Commission (IRC). Since 2013, the University has accumulated K58,023,821 of base tax and K74,594,076 of penalties from the IRC. From 2020 onwards PNGUoT receives its Personnel Emolument Budget hence PNGUoT pays their current tax liabilities promptly. PNGUoT has made an agreement with IRC to pay the old tax liabilities in installment of K2,400,000 annually (monthly equitable installment of K200,000)

16.a Current Liability

Salary & Wages Tax which is due within a year	2,400,000	2,400,000
Business Payment Tax which is due within a year	20,798	57,073
Group Tax which is due in the year	2,420,798	2,457,073

16.b Non-Current Liability (due more than a year)

Group Tax	137,226,032	132,683,420
GST	(1,009,978)	(1,038,226)
Income Tax	85,426	85,426
	136,301,480	131,730,620

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Notes to and forming part of the financial statements for the year ended 31 December 2024

(i) The expense for the base group tax for the year is included as part of the salary and allowances expense for the year as disclosed in note 8. The penalty tax expenses are separately disclosed in the income statement.

The University is discussing with the Treasury how to resolve the tax issue fairly. It is exploring debt swaps and tax remission options.

The Internal Revenue Commission (IRC) replied to Unitech's request for tax penalty remission on 12th October 2023. It stated that:

- a) It will consider and apply remission only after Unitech pays the base tax liability through regular payments.
- b) It is more likely to grant full remission if Unitech, the Treasury, and the IRC agree on a debt swap deal, and
- c) It will cooperate with Unitech for a fair outcome and not take immediate action to recover the taxes and penalties.

Unitech's cash flow projections show that it will make annual payments of K 2.4 milloons for the outstanding base tax of the previous years in addition to the amounts payable for the current year's base group taxes.

17. Annual leave

Opening balance	9,374,131	8,105,329
Addition during the year	1,173,669	1,268,802
	10,547,800	9,374,131

18. Long service leave

Opening balance	12,207,028	11,179,568
Addition during the year	(428,859)	1,027,461
	11,778,170	12,207,028

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Notes to and forming part of the financial statements for the year ended 31 December 2024

14.a. Property, Plant and Equipment

	Land	Buildings	Motor vehicles	Furniture & fittings	Computer equipments	Library Books	Intangible Asset	Plant & Office equipment	Biological Assets	WIP	TOTAL
Cost	K	K	K	K	K	K	K	K	K	K	K
At 1 January 2024	262,830,000	359,543,479	9,856,089	3,673,336	11,730,401	11,604,376	1,064,115	35,011,683	1,180,639	19,189,260	715,683,378
Additions	-	-	20,000	454,009	1,121,171	8,992	-	2,354,965	-	12,662,893	16,622,030
Disposal	-	-	-	-	-	-	-	-	-	-	-
Revaluation	-	-	-	-	-	-	-	-	-	-	-
At 31/12/2024	262,830,000	359,543,479	9,876,089	4,127,344	12,851,572	11,613,368	1,064,115	37,366,648	1,180,639	31,852,153	732,305,408

Depreciation

At 1 January 2024	-	34,372,491	5,760,176	1,832,848	7,144,603	2,204,745	838,060	20,765,027	-	-	72,917,949
Disposal	-	-	-	-	-	-	-	-	-	-	-
Revaluation	-	-	-	-	-	-	-	-	-	-	-
Charge for the year	-	10,542,211	847,033	178,387	1,020,376	939,740	39,047	1,652,793	-	-	15,219,586
At 31/12/2024	-	44,914,702	6,607,209	2,011,234	8,164,978	3,144,485	877,107	22,417,820	-	-	88,137,535
	262,830,000	314,628,777	3,268,880	2,116,110	4,686,594	8,468,884	187,008	14,948,828	1,180,639	31,852,153	644,167,872

14.b. Investment Property

	Land	Buildings	Total
At 1 January 2024	3,190,000	1,660,000	4,850,000
At 31/12/2024	3,190,000	1,660,000	4,850,000
At 1 January 2024		907,310	907,310
Charge for the year		329,356	329,356
At 31/12/2024	-	1,236,667	1,236,667
At 31/12/2024	3,190,000	423,333	3,613,333

Grand Total	266,020,000	315,052,110	3,268,880	2,116,110	4,686,594	8,468,884	187,008	14,948,828	1,180,639	31,852,153	647,781,206
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THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

Notes to and forming part of the financial statements for the year ended 31 December 2024

19. Deferred income

	Balance as of 31.12.2024	Depreciation	Revaluation Adjustment	Expenses Incurred	Additional Grants 2024	Balance as of 01.01.2024
	K	K	K	K	K	K
a. Completed projects - PIP related projects						
Buildings (academic, dormitories and staff residence)	16,377,030	(174,341)	-	-	-	16,551,371
Motor vehicle	230,677	(74,234)	-	-	-	304,911
	16,607,707	(248,575)	-			16,856,282
b. Outstanding projects and researches						
PIP related projects	13,231	-	-	-	-	13,231
Buildings and Accreditation projects	20,000,000	-	-	-	-	20,000,000
Student mess	10,300,000	-	-	-	300,000	10,000,000
Library	15,300,000	-	-	-	300,000	15,000,000
Multi Purpose Hall	6,500,000	-	-	-	-	6,500,000
Staff House	6,300,000	-	-	-	300,000	6,000,000
Infrastructure/Telekom College	200,000	-	-	-	200,000	-
PIP for Research	700,000	-	-	-	-	700,000
Dosimetry Lab	59,313,231	-	-	-	1,100,000	58,213,231
Incentive Projects	4,615,953				2,477,023	2,138,930
Funding from DHERST						
Maintenance to Academic Departments	956,072	-	-	-	-	956,072
Information Communication Technology System (ICTS)	1,923,928	-	-	-	-	1,923,928
	2,880,000					2,880,000
Other research grants	480,024	(14,827)	-	-	-	494,851
Satellite campus fund	1,337,365	-	-	(876,965)	1,246,277	968,053
Research and scholarship fund	1,817,389	(14,827)	0	(876,965)	1,246,277	1,462,904
	85,234,280	(263,402)	-	(876,965)	4,823,300	81,551,347



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