

From the Dean



Happy New Year to all scientists at the Department of Science at the University of Fiji. Welcome also to new students registered in the first year Science Programme as the year begins with Orientation in early February.

Those reading the Science Newsletter for the first time will be heartened by the number of activities undertaken by staff and students as well as the internationalisation of the programmes we offer. As Acting Dean for a number of years now, I have been impressed with the exciting visuals appearing in the Newsletter in reports of all the activities under the able leadership of the Head of Department, Associate Professor Ramendra Prasad and his team.

This year the Science Department has applied its creative skills to ensure new students are attracted to its programmes and find much resonance in the research activities of the staff as well. The photographs and images in the Newsletter speak for themselves and are a good indication of the richness and diversity of the people and activities represented by the Science Department.

Many may think that Science as a subject and a discipline is at a crossroads due to the challenges that we face as a planet. For that reason we hope to attract a significant number of students to our flagship Earth and Planetary Sciences Programme with volcanology as a unique qualification within it. This programme is the first of its kind in the Pacific and would be of interest to both Fijian and Pacific Island students. Indeed all the Science Programmes are taught by leaders in their field, with a brand new PhD in the Department to be congratulated as well, Dr Priyatma Singh. We are very proud of her.

Thanks go to all who assisted in the production of our informative and vibrant newsletter and we wish everyone all the best for the coming year.

Professor Shaista Shameem
FRSA, SJD, PhD, LLM, MA, LLB, BA.
Acting Dean, School of Science and Technology
Vice Chancellor

Awards

Dr Priyatma Singh Awarded PhD

Huge congratulations to Dr Priyatma Singh on the successful completion of her PhD at Linköping University, Sweden. Her doctoral research examines Marine Spatial Planning as a governance tool for Pacific Island states. Through her work, Dr Singh highlights how inclusive and culturally grounded approaches to ocean governance can better align ecological sustainability with social justice and economic aspirations. Dr Singh is the first working academic staff member from the department since the establishment of the university to successfully complete a PhD, which is an inspiring achievement for the department and UniFiji.



HOD Recognised at 8th ASEAN Smart Grid Congress



HOD Assoc. Prof. Ramen, represented the Pacific at the 8th ASEAN Smart Grid Congress (ASGC 8) held on 12–13 August 2025 in Penang, Malaysia. As part of the Transforming Energy Access – Learning Partnership (TEA-LP) delegation, he served as a plenary panelist, presenting Microgrid Implementations – A Small Islands Perspective, highlighting energy challenges in Fiji and other Pacific Island nations. He also presented a co-authored paper with Ms. Ayesha Reddy on cloud cover forecasting for smart grids, which received the Best Presenter Award. The Congress strengthened regional and international networks and reinforced UniFiji's growing profile in smart grid and clean energy research.

World's Top 2% Scientists for 2025



The department is proud that our HOD, Assoc. Prof. Ramen, has been named among the World's Top 2% Scientists for 2025 by Stanford University and Elsevier, his third consecutive year on the list. VC and Acting SOST Dean, Professor Shaista Shameem commended the achievement as a testament to UniFiji's growing research strength.

Welcome

We welcome Dr Deepika Prasad to the Science Department. Dr Prasad recently graduated with a PhD in Plant Genetic Engineering from Korea University. Her research interests include genetic improvement of plants and biotechnological approaches to crop enhancement.



The department welcomed Ms Shivaashna Kumar. Ms Shivaashna joins as a Part-Time Assistant Lecturer in Semester 2 2025, bringing enthusiasm for both teaching and research to our academic community. With her appointment in the Department of Science, she will contribute to

student learning and foster engagement in scientific inquiry supporting courses.

Farewell



The department bid a fond farewell to Ms. Kelera Railoa and thank her for her valuable contributions to the department. From working closely with rural communities in Ra through the USAID Pacific American Fund Aquaculture Project to part time teaching assistant, Ms. Kelera's journey has been defined by purpose, resilience, and a deep commitment to sustainability in the Pacific. She now embarks on the next chapter of her professional career as a Senior Quality Control Analyst at Douglas Pharmaceuticals, where she applies her strong background in analytical chemistry within the pharmaceutical industry. We wish Ms Kelera every success in her future endeavours as she departs UniFiji.

The department also bid farewell to Ms. Upashna Anjali Ram as she moves on to the next stage of her professional journey. We wish her every success and all the very best in her future endeavours.

Student Section

Testimonial



Shivika Sanjana (20251057) is a second-year student in the BSc Mathematics and Physics programme. Her interest in physics began with curiosity about how natural laws explain everyday phenomena. What started as an equation-based subject has become a way of thinking that sharpens her problem-solving and critical analysis skills. She is particularly fascinated by

Maxwell's equations and the link between electric and magnetic fields, especially when theory comes to life through laboratory experiments. Shivika strengthens her understanding by revisiting fundamentals, solving problems, and engaging in discussions with lecturers and peers. Her involvement in the International Union for Pure and Applied Physics (IUPAP) Summit and volunteering at bootcamps has further developed her confidence, teamwork, and appreciation for real-world applications of physics.



Shaniya Kant (20250091) is another second-year Mathematics and Physics student. Her understanding of physics deepened once

laboratory experiments showed how physical concepts apply in the real world. An experiment on magnetic fields, using magnets and iron filings, helped clarify key ideas in electromagnetism. When she finds topics challenging, Shaniya connects theory to practical applications,

seeks guidance from lecturers, and uses online resources. She manages her academic life through careful daily planning and is grateful to UniFiji and the department for the opportunity to attend the IUPAP Summit, which broadened her awareness of current issues in physics.

Field Trip



UniFiji's Aquatic Chemistry, Foundation Science, and Environmental Science students got a firsthand look at how raw water is treated into safe drinking water during a field visit on August 2025. Special thanks to the dedicated wastewater treatment workers who protect public health, and much appreciation to the Water Authority of Fiji for welcoming our students at the Saru Water Treatment Plant and Lautoka Regional Wastewater Treatment Plant.

Upcoming

- 9 February: Semester 1 orientation
- 16 February: Semester 1 begins
- 6 April: Midsemester break begins
- 10 April: Midsemester break ends
- 13 April: Semester 1 resumes
- 1 June: Study Break Begins
- 5 June: Study Break ends
- 8 June: Final Examination begins
- 19 June: Final Examination ends

Student Registration



The Department staff has been actively involved in the Semester 1 2026 student registration. Staff are facilitating course approvals, ensuring students meet programme prerequisites, academic counselling, career advice and providing guidance on course selection.

Programmes offered by the Department

Foundation

- Certificate in Foundation Studies (Science)

Undergraduate

- Bachelor of Science in Biology & Chemistry
- Bachelor of Science in Biology & IT
- Bachelor of Science in Chemistry & Physics
- Bachelor of Science in Earth & Planetary Sciences
- Bachelor of Science in Physics & IT
- Bachelor of Science in Mathematics & Physics
- Bachelor of Environmental Science
- Bachelor of Agricultural Engineering

Postgraduate

- Postgraduate Diploma in Energy & Environment
- Postgraduate Diploma in Volcanology
- Master of Science in Renewable Energy Management
- Master of Science in Environmental Science
- Master of Science in Earth & Planetary Sciences
- Master of Science in Physics
- Doctor of Philosophy in Environmental Science
- Doctor of Philosophy in Earth & Planetary Sciences
- Doctor of Philosophy in Physics

Course details are shown in the last page of this newsletter.

What's on at Student Orientation?



Kick-off your University of Fiji journey by attending the Welcome Ceremony, your official introduction to campus life. Join fellow Science students for a warm and engaging programme featuring welcome addresses from the Department staff, opportunities to meet student representatives, and sessions that celebrate the diverse cultures of Fiji. The ceremony sets the tone for your studies and helps you feel connected, informed, and ready to begin your academic journey at the UniFiji.

What to Expect

- Welcome presentations and orientation briefings
- Engaging quizzes and activities
- Opportunities to meet new friends, staff, and student representatives

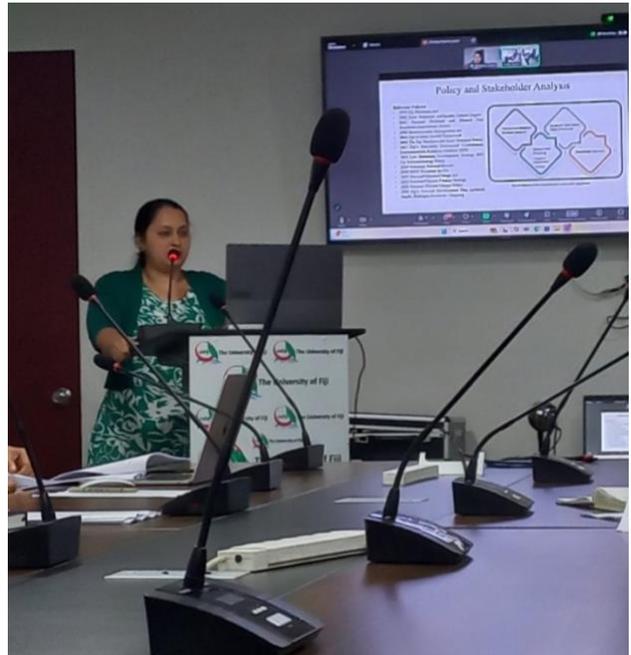
Our friendly staff will be on hand to guide you and answer questions. We look forward to welcoming you to Saweni Campus and helping you start your academic journey with confidence!

Student Support

Students who may be feeling stressed or in need of support are encouraged to reach out to the Student Counsellor, Mr Peni Tove. He can be contacted via email at peni@unifiji.ac.fj or through WhatsApp/ Viber on 8602951. Mr Tove's office is located in Room B002.

Events

PhD Research Proposal



SOST hosted the PhD research proposal defence seminar for Ms Dhrishna Charan on Tuesday, 1st July 2025, at Room A2020, Saweni Campus. Ms Dhrishna presented her proposal titled *Decarbonizing Road Transport in Fiji using Hydrogen Fuel Cell Vehicles: A Comprehensive Life Cycle Analysis of Hydrogen Fuel Adaptation and Policy Pathways*. The seminar highlighted her innovative approach to exploring sustainable transport solutions and hydrogen fuel adoption in Fiji, contributing to national climate action and renewable energy planning initiatives.

NBSAP Inception Workshop



Dr. Depika Prasad and Ms. Ayesha Reddy represented UniFiji at the 2025 National Biodiversity Strategies and Action Plans (NBSAP) Review Workshop in Suva. The workshop helped

align Fiji’s biodiversity plan with the Kunming-Montreal Framework to strengthen national efforts in environmental protection and restoration.

Faraday Institution Conference



Dr. Sekove Vodo represented the UniFiji at the 2025 Faraday Institution Conference held at the University of Warwick, UK through the Battery Ambassadors Programme. He engaged with global researchers, visited world-class battery facilities, and participated in discussions on next-generation chemistries and industry-university partnerships.

Climate Compatible Growth Training



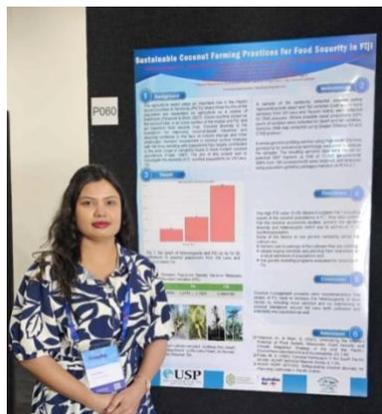
In September, Ms Ashwin Prasad completed the EMP-APAC 2025 training, gaining hands-on Open Source Energy Modelling System (OSeMOSYS) skills for renewable energy planning and climate policy in the Asia-Pacific. Thanks to TEA-LP, CCG, AIT, UN ESCAP, and UniFiji for their support!

LAGI 2025 Exhibition



The Land Art Generator Initiative (LAGI) 2025 Fiji Exhibition launched on 6 November at the Fiji Arts Council showcasing designs that blend art, culture, and renewable energy. Opened by Deputy PM Hon. Viliame Gavoka, Fiji became the first Pacific nation to host a LAGI competition, reinforcing its leadership in climate resilience and sustainable design. Featuring over 200 submissions from 45 countries, two prototypes will be built in Marou Village, Yasawa. HOD Assoc. Prof. Ramen served as an international juror, highlighting the department’s role in promoting sustainable, culturally grounded energy solutions.

TropAg Conference



In November 2025 Ms. Shirlyn Lata, Assistant Lecturer in Biology, represented UniFiji at the TropAg Conference in Brisbane, Australia. She presented her poster, “Sustainable Coconut Farming Practices for Food Security in Fiji”, co-authored with experts from USP, The Pacific Community, IITA, and Taveuni Research Centre. Her study is the first to examine the genetic diversity of Fijian coconut stands, offering insights for sustainable agriculture and food security.

IUPAP Pasifika Physics Summit



The department played a key role in the International Union of Pure and Applied Physics (IUPAP) Pasifika Physics Summit on 18–19 November 2025 at Nalagi Hotel, Nadi, with Physics staff and students serving as facilitators. The summit united leading physicists, educators, and researchers from the Pacific and beyond. VC and Acting SOST Dean, Professor Shaista Shameem in delivering the welcome address, highlighted declining enrolments and gender imbalance in physics, sharing her experience as one of three female students in her high school class. She stressed making physics accessible, relevant, and linked to real-world issues like climate change, renewable energy, space science, and emerging technologies, noting UniFiji's growing science programmes.

Open Day 2025



During UniFiji Open Day on 3rd October 2025, the Department showcased interactive displays in Physics, Chemistry, Biology, Environmental Science, and Renewable Energy at the UPSM Science Laboratories. High school students from Sigatoka to Tavua engaged with hands-on experiments, demonstrations, and practical applications of

science, guided by UniFiji lecturers and students. Visitors who correctly answered science quiz questions were awarded recharge cards, adding an element of fun and motivation. The displays sparked curiosity, highlighted the real-world relevance of science, and provided students with a first-hand experience of university-level STEM studies.

Visit from SUSTech



In January 2026, the department recently hosted professors from the Southern University of Science and Technology (SUSTech). The discussion also highlighted emerging initiatives in electric boats, ocean monitoring, and flood early warning systems.

Papers

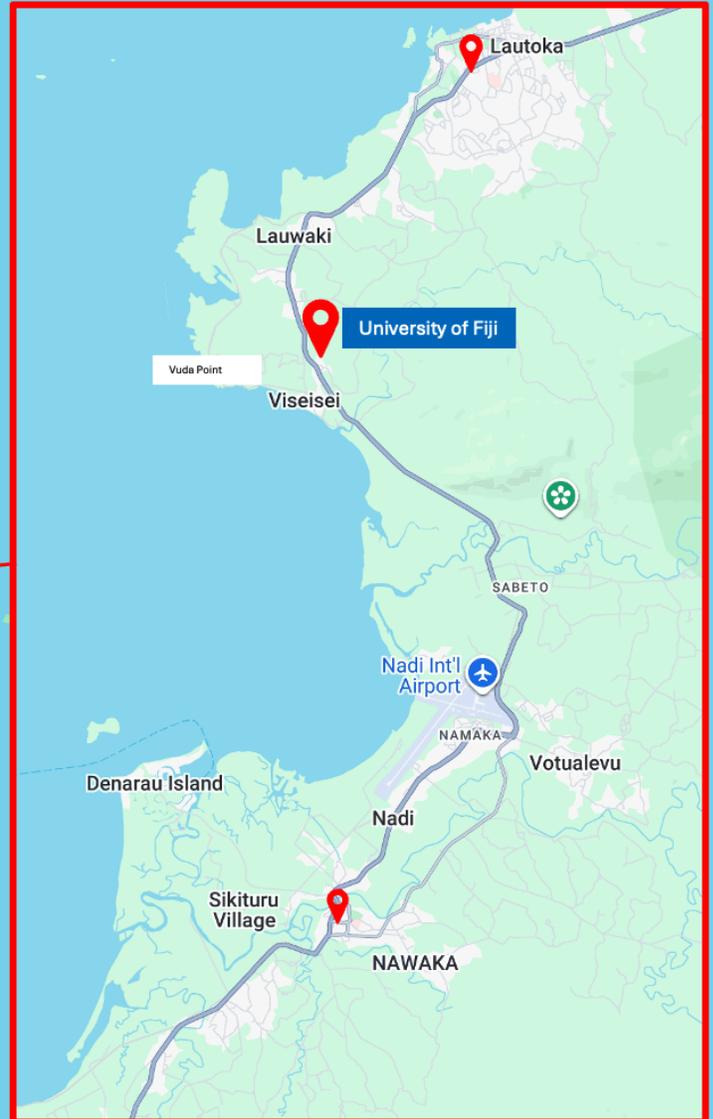
Diykh, M., Ali, M., Jamei, M., Prasad, R., Labban, A. H., Abdulla, S., ... & Farooque, A. A. (2025). Multi-step ahead significant wave height forecasting using global and local view graph representation based on GRU model. *Ocean Engineering*, 340, 122314.

Prasad, R., Muna, L., Vodo, S., Shivani, Azam, M. R., Charan, D., ... & Tamari, L. (2025). Development of waste management model for small island communities: a case study of Koroi-pita, Fiji. *Environmental Science and Pollution Research*, 32(34), 20360-20374.

Reyes-García, V., Attoh, E. M., Barrington-Leigh, C., Benyei, P., Calvet-Mir, L., Chakauya, R., ... & LICCI Consortium. (2025). Experienced climate change impacts help explain subjective well-being—Evidence from 14 nature-dependent communities. *People and Nature*.

Woroniecki, S., Feetham, P., Linnér, B. O., Movono, A., Singh, P., Vaccarino, F., ... & Zeiler, K. (2025). Grounding the conversation on loss and damage: insights from sense-making analysis with Pacific leaders. *Climatic Change*, 178(11), 190.

Getting to UniFiji (Saweni Campus)



Access

From Nadi Airport: 20 minutes by vehicle or 30 minutes by bus
From Lautoka: 15 minutes by vehicle or 20 minutes by bus



Department of Science Newsletter

Issue 3 | February 2026

Undergraduate Programmes

	Course List	Degrees to be awarded
Compulsory Subjects	LLC101 English for Academic Purposes ITK111 Spoken iTaukei Language for Beginners HIC111 Spoken Hindi for Beginners	
Specialised subjects (Common)	MTH111 Calculus I and Linear Algebra MTH114 Calculus II and Differential Equations ITC100 Information Technology for the Workplace UUU200 Contemporary Fiji UUU300 Governance and Ethics	
Specialised subjects (Biology)	BIO112 Plant Biology BIO111 Animal Biology BIO211 Biodiversity and Conservation BIO212 Genetics BIO215 Integrated Pest Management BIO214 Microbiology BIO213 Ecology BIO301 Research Topics in Biology BIO312 Physiology BIO313 Marine Biology BIO315 Aquaculture and Mariculture	
Specialised subjects (Chemistry)	CHE111 Principles of Inorganic and Physical Chemistry CHE112 Principles of Organic Chemistry CHE211 Physical and Inorganic Chemistry CHE212 Organic and Analytical Chemistry CHE311 Qualitative and Quantitative Techniques CHE312 Aquatic Chemistry CHE313 Environmental and Applied Chemistry CHE314 Biochemistry	
Specialised subjects (Physics)	PHY101 Physics for Science and Engineering I PHY 102 Physics for Science and Engineering II PHY212 Atmospheric Physics PHY213 Quantum Physics PHY214 Physics of the Environment PHY301 Special Topics in Engineering and Physics PHY312 Renewable Energy Resources PHY313 Meteorological Physics PHY314 Electricity and Electronics PHY315 Environmental Soil Physics PHY311 Research Topics in Physics	Bachelor of Science in Biology & Chemistry Bachelor of Science in Biology & IT* Bachelor of Science in Chemistry & Physics Bachelor of Science in Earth & Planetary Sciences Bachelor of Science in Physics & IT* Bachelor of Science in Mathematics & Physics* Bachelor of Environmental Science Bachelor of Agricultural Engineering
Specialised subjects (Environmental Science)	ESC100 Introduction to Environmental Science ESC103 Introduction to Scientific Research ESC201 Climate Change and Society ESC202 Agroecology ESC203 Geographic Information Systems ESC205 Coastal Conservation and Management ESC300 Natural Resource Management ESC303 Environmental Impact Assessment ESC304 Public Health and Environment ECO305 Agricultural Economics	
Specialised subjects (Agricultural Engineering)	AGE201 Agricultural Export Systems and Pathways AGE202 Mechanisation in Agricultural Practices AGE300 Industrial Attachment AGE301 Agricultural Technology	
Specialised subjects (Earth and Planetary Sciences)	EPS200 Solar System and Life EPS201 Historical Geology EPS202 Earth Materials EPS300 Mineralogy EPS301 Astrophysics EPS302 Groundwater and Aquifers EPS303 Solar System Geophysics EPS304 Geohazards EPS305 Remote Sensing and Field Methods	

*IT and Mathematics specialized courses are offered by the Computer Science and Mathematics Department



Department of Science Newsletter

Issue 3 | February 2026

	Course List	Degrees to be awarded
Postgraduate Programs	Compulsory Subjects RSE400 Research Methods in Science and Engineering	Postgraduate Diploma in Energy & Environment Postgraduate Diploma in Volcanology Master of Science in Renewable Energy Management (MScREM) Master of Science in Environmental Science Master of Science in Earth & Planetary Sciences Master of Science in Physics Doctor of Philosophy in Environmental Science Doctor of Philosophy in Earth & Planetary Sciences Doctor of Philosophy in Physics
	Specialised subjects (Energy and Environment) REE401 Utilization of Renewable Energy Resources REE402 Climate Change and Environment REE403 Environment and Energy Policy REM400 Renewable Energy Technologies I REM401 Renewable Energy Technologies II REM402 Renewable Energy and Sustainable Development REM404 Renewable Energy Technologies III	
	Specialised subjects (Volcanology) EPS401 Seismology EPS402 Geology of the Terrestrial Planets EPS403 Marine Geophysics EPS404 Watershed and Wetland Hydrology EPS405 Igneous and Metamorphic Petrology EPS406 Carbonate Petrology	
Masters	Specialised subjects (Environmental Science) ESC600 PT / ESC600FT Major Thesis in Environmental Science	
	Specialised subjects (Physics) PHY600 PT / PHY600 FT Major Thesis in Physics	
	Specialised subjects (Renewable Energy Management) REM405 Sustainable and Environmental Chemistry REM406 Energy Modelling and Forecasting REM407/REM407 PT Research Thesis/Industrial Attachment REM408 Energy Access Solutions and Mini Grid Design	
	Specialised subjects (Earth and Planetary Sciences) EPS400 Physical Volcanology EPS410 FT/EPS410 PT Minor Research Thesis	
PhD	Specialised subjects (Environmental Sciences) ESC700 PT / ESC700 FT PhD in Environmental Science	
	Specialised subjects (Earth and Planetary Sciences) EPS700 FT / EPS700 PT PhD in Earth and Planetary Sciences	
	Specialised subjects (Physics) PHY700 FT / PHY700 PT PhD in Physics	

* FT : Full time, PT: Part time

To suggest a story or other content please email
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