

DUT INNOVATION TURNS WASTEWATER INTO CLEAN ENERGY, TACKLING SOUTH AFRICA'S WATER AND ENERGY CRISIS



In the face of South Africa's growing water scarcity, pollution, and reliance on carbon-intensive energy, the Durban University of Technology (DUT) is pioneering a transformative solution. The Smart Wastewater Treatment to Energy System (SWTES), developed by the Green Engineering Research Group (GERG) in DUT's Department of Chemical Engineering, is reimagining wastewater treatment through the lens of sustainability, digital innovation, and community impact.

Conceptualised in 2019 by Dr Emmanuel Kweinor Tetteh (Principal Investigator) and Prof Sudesh Rathilal (Project Leader), the SWTES project began as a doctoral research initiative and has since evolved into a nationally recognised solution. With funding from the Water Research Commission (WRC), the team developed and scaled the system from lab-scale models to a pilot plant that treats real industrial wastewater, simultaneously producing biogas, recovering nutrients, and enabling water reuse.

The integrated system is equipped with smart features such as real-time monitoring, automation, and digital platforms, allowing for cost-efficient operations and reduced carbon emissions. Designed to function effectively in decentralised and under-resourced settings, the SWTES directly contributes to DUT's ENVISION2030 strategy by advancing sustainability, enabling innovation, fostering inclusive engagement, and empowering students and communities. It also supports the UN Sustainable Development Goals, specifically SDG 6 (Clean Water and Sanitation) and SDG 7 (Affordable and Clean Energy). The system is adaptable for rural communities, agro-industries, and municipal plants, addressing both environmental and economic challenges.

A critical milestone for the project was a Strategic Workshop held to align the system's development with national and continental priorities such as the African Union Agenda



Pictured: Mr Thashrik Pirithiraj and Dr Emmanuel Tetteh, Ms Sanelisiwe Dietsela and Dr Sibongile Florina Phiri showcasing SWTES and other projects at SANEDI conference Johannesburg.

2063 and South Africa's National Development Plan 2030. The event gathered academics, municipal leaders, industry partners, and community members to refine the design, map stakeholders, and establish a commercialisation roadmap. It further promoted inclusivity, highlighting the importance of women in science, entrepreneurship, and capacity-building.

The project has inspired a range of complementary innovations, including magnetic nanomaterials for wastewater purification, plastic-to-energy conversion, and solar-powered water treatment systems. These initiatives are also being explored through life-cycle and techno-economic assessments by GERG postgraduate researchers.

SWTES has already made a substantial academic and societal impact. More than 30 peer-reviewed articles have been published, with several postgraduate students graduating with distinction. The project has received multiple awards, including the TW Kambule-NSTF Emerging Researcher Award, the NRF Next Generation Researcher Award, the ENI Young Talent Researcher from Africa Award, and the L'Oréal-Unesco for Women in Science Award. SWTES also earned recognition at the 2024 DUT Engagement Showcase and Pitching Awards, underscoring its value as a model for sustainable, community-driven innovation.

More than a technological advancement, SWTES represents a platform for education, policy influence, and community empowerment. With ongoing collaboration, funding, and knowledge exchange, DUT continues to position itself as a leader in green technology and socially responsive research, offering scalable solutions for national water and energy resilience.

PHUMEZAMSONGELWA





Pictured: Durban University of Technology students, Zamantimande Shabangu, Nonzwakazi Siphuhlu and Onela Zoko(Leader) in the picture with donated items to the children to encourage others to also donate.

EDUCATION IN ACTION: DUT STUDENTS DRIVE COMMUNITY CHANGE THROUGH INNOVATIVE PUBLIC HEALTH PROJECT

The Durban University of Technology (DUT) continues to break new ground in 2025 with the evolution of its award-winning initiative, 'Improving Lives in the Warwick Avenue Markets', led by Professor Firoza Haffejee of the Department of Basic Medical Sciences. More than just a university project, this initiative has become a powerful platform for change, merging education, research, and community service to uplift some of Durban's most marginalised communities.

Originally launched in 2022, the project gained recognition when it clinched first prize at the DUT's Engagement Showcase and Pitching Awards in 2022, receiving R25,000 in funding. Designed as a hands-on learning experience for students in epidemiology and public health, the initiative placed learners in the heart of the Warwick Avenue Markets, where they were tasked with observing informal trading and environmental conditions faced by informal traders and linking these to public health outcomes.

Through this experiential model, students produced detailed field notes and photographic evidence, pinpointing significant health risks. Working alongside informal traders, they helped implement practical, community-led solutions. These included organising large-scale clean-up campaigns to reduce waste and pollution, distributing mattresses to traders who sleep on concrete floors, providing secure storage containers for food and water, and leading educational drives focused on hygiene and pollution control.

This integration of academic content with civic responsibility exemplifies DUT's mission to embed its educational model within real societal contexts, empowering students not only with knowledge, but with purpose.

Though formal funding was unavailable in 2024, the project's energy did not wane. Students were only required to plan interventions as part of their coursework, yet many voluntarily turned those plans into action. Some sourced

One of the most impactful spin-offs during this period was the construction of greenhouses in Claremont, which supported a local subsistence farming community. This initiative addressed both environmental sustainability and food insecurity, illustrating the wide-reaching benefits of socially engaged student learning.

sponsorships and donations, while others dipped into their own pockets to bring their ideas to life.

One of the most impactful spin-offs during this period was the construction of greenhouses in Claremont, which supported a local subsistence farming community. This initiative addressed both environmental sustainability and food insecurity, illustrating the wide-reaching benefits of socially engaged student learning. Community members responded with enthusiasm and gratitude, forming bonds of mutual trust and respect that are now central to the project's identity.

In 2025, the project enters an exciting new phase. Students are now participating in a design thinking initiative in collaboration with

other departments within the Faculty of Health Sciences. This interdisciplinary approach aims to generate innovative, user-centred solutions tailored to community challenges, pushing the boundaries of how academic institutions engage with the world beyond their walls.

The academic footprint of the project continues to grow. It has generated research publications and conference presentations, showcasing its value as a model of decolonised, transformative education. By bridging theory and practice, the initiative contributes to DUT's broader educational transformation objectives and aligns strongly with its ENVISION2030 strategic priorities.

From the heart of the Warwick Avenue Markets to the green spaces of Claremont, Prof. Haffejee's initiative demonstrates how higher education can be both locally grounded and globally relevant. It is a compelling example of how universities can foster real change by placing community engagement and student development at the centre of their mission.

As the project continues to grow in 2025 and beyond, it remains a shining example of DUT's commitment to impactful education, social justice, and inclusive development, proving that meaningful change begins when learning steps out of the classroom and into the lives of the people it seeks to serve.

SIHLE NZIMA

DUT RESEARCHER'S BIO-BRICK INNOVATION SPARKS WAVE OF WASTE-TO-VALUE PROJECTS

At the forefront of transforming South Africa's environmental challenges into practical solutions is a growing portfolio of waste valorisation projects led by Dr Farai Dziike at the Durban University of Technology (DUT). What began with the invention of a pioneering bio-brick has now expanded into a suite of green innovations poised to reshape how waste is managed, energy is produced, and housing is built, all with sustainability at their core.

The flagship of these projects is the bio-brick, a building material made entirely from two problematic waste streams: sugarcane bagasse ash and single-use plastic. Developed through extensive laboratory research, the brick is not only 42 percent stronger and 38 percent cheaper than traditional clay bricks but is also water-resistant, thermally stable, and free of additional chemical additives.

Now entering its next phase, the project is preparing to produce 5,000 bio-bricks to build an RDP house, which will be donated to a family in need. This initiative marks a significant step in demonstrating the brick's viability in real-world construction while addressing both housing and environmental needs.

"We want to prove that innovation can directly serve communities," says Dr Dziike. "By building a home using waste materials, we are



Pictured: Dr Dziike during a presentation.

tackling two challenges at once, waste pollution and housing shortages."

The bio-brick project has been supported by various funding streams, including the National Research Foundation's Postdoctoral Fellowship, a Technology Innovation Agency (TIA) development grant, and most recently, the Technology Development Fund from DUT's Technology Transfer and Innovation (TTI) unit.

The bio-brick is just one part of a larger waste valorisation programme under Dr Dziike's leadership, aimed at converting waste into

economically viable, environmentally friendly products. One of the current projects focuses on converting single-use plastic into clean-burning biodiesel through a process called pyrolysis. This technology not only reduces plastic waste but also provides an alternative fuel source for communities and industries.

Another ongoing initiative involves developing biodegradable plastics made from hemp waste. This research explores environmentally safe alternatives to petroleum-based plastics and supports the agricultural sector by using hemp biomass that would otherwise go unused.

A third project is tackling green energy generation through advanced biodigestion of organic biomass. Using both heterogeneous and biocatalysts, the system converts waste into biogas, offering clean energy solutions for communities while reducing organic waste volumes.

All of these initiatives are being developed into business ventures aimed at creating sustainable enterprises, generating employment, and producing high-value products aligned with circular economy principles. These projects are not only scientific innovations but also engines for social and economic development.

"We are not just experimenting in labs," says Dr Dziike. "We are creating practical, scalable solutions that can transform communities and industries. Our aim is a total zero-waste society, one project at a time."

The impact of these efforts has earned the team several accolades. These include a R260,000 prize at the 2023 DUT-TIA Innovation Indaba, a R35,000 second-place award at Innovate Durban's Pitching Den, and the DUT's Innovation of the Year Award in 2024. In addition, the project was featured in the DUT's 2024 Engagement Showcase and Pitching Awards.

These recognitions have helped transition the projects from the research phase into real-world application, attracting the attention of municipalities, private sector stakeholders, and environmental organisations.

With growing momentum, Dr Dziike calls for collaborative action across sectors, from government and academia to investors and local communities, to scale these innovations and drive meaningful impact.

"Innovation must be inclusive. With the right resources, exposure, and commitment, we can build clean cities, power homes with green energy, and remove harmful waste from our ecosystems," he says. "The journey to a better tomorrow starts now."



Pictured: Dr Dziike at the lab.

PHUMEZA MSONGELWA

DUT CHAMPIONS PRACTICAL EDUCATION WITH GROUND-BREAKING PAT PROJECT FOR HIGH SCHOOLS

In a bold move to strengthen technical education and dispel lingering myths about the capabilities of its graduates, the Durban University of Technology (DUT) has continued to expand its innovative Practical Assessment Task (PAT) Project, aimed at supporting high school learners and developing future-ready teachers.

Launched in 2023 and implemented in 2024, the project was initiated by Mr Siphesihle Mthethwa, a passionate lecturer in Electrical Technology. He partnered with Dr Sotsaka and Mr Mlambo, both Engineering Graphics and Design (EGD) lecturers, to tackle long-standing concerns in the education sector, namely, that DUT's technical education graduates lack practical competence.

The PAT Project directly engages Grade 12 learners in public high schools, aligning with the Department of Basic Education's prescribed PAT curriculum. Initially focused on Electrical Technology and EGD, the programme expanded in 2025 to include Civil and Mechanical Technology, showing strong growth and impact across technical disciplines.

Using a Design Thinking approach, the DUT team first identifies schools that need support and works closely with them to design tailored interventions. Pre-service teachers in their third year of study in DUT's School of Education are then assigned to help implement these interventions, using Project-Based Learning as the main pedagogical tool. This not only prepares the pre-service teachers for the realities of the classroom but also exposes them to the often-untouched Grade 12 curriculum, especially the practical components.

One of the project's key highlights this year was the Electrical Technology Practical Task event, hosted on the 29-30 May 2025, which brought Grade 12 learners from Zibukezulu Technical High School to DUT PMB Campus. Over two days, the learners completed a complex 3-phase automatic star-delta motor starter with timer task, a core part of their curriculum. Due to the class size of 46 learners, the group was split over two days to ensure maximum hands-on participation.

"This experience is a game-changer for our learners," said a teacher from Zibukezulu High School. "We don't have the equipment or time



Pictured: Pre-service teacher (Lungelo Maphumulo) guiding a group of learners to do an Automatic Star Delta connection with timer, prescribed in the DBE PAT.

“This project is not about chasing money. It’s about empowering our pre-service teachers and making a real difference in the schools we serve.”

– MR SIPHESIHLE MTHETHWA

to properly conduct PATs. This project has not only taken that burden off my shoulders but also given our learners a once-in-a-lifetime chance to step onto a university campus and access real resources.”

The initiative has grown in scale and reputation. While it started with one school, a second school joined in 2025, and the project now caters to multiple technical streams. It has also collaborated with DUT's STEM project to assist Grade 10 learners by focusing on PAT-related content at earlier stages of learning.

The project has received significant support and recognition. In 2024, it was awarded R150,000 through DUT's CELT DT and PBL Call, and also earned a runner-up prize from the DUT Engagement Showcasing and Pitching Awards.

In 2025, the programme secured an additional R300,000 from CELT, allowing it to split into two dedicated teams: one focusing on EGD and Electrical Technology, and the other on Civil and Mechanical Technology – each receiving R150,000 in funding.

Beyond the funding, the real value of the PAT Project lies in its transformational impact on teacher development and school support. It not only equips DUT students with real-world teaching experience but also uplifts local schools by addressing equipment shortages, capacity gaps, and time constraints.

There are also plans to develop research outputs from the programme, using data collected from school engagements and student performance. “This project is not about chasing money,” Mr Mthethwa explained. “It’s about empowering our pre-service teachers and making a real difference in the schools we serve.”

As the project continues to grow, it is fast becoming a national model for community-engaged learning, curriculum relevance, and technical education excellence, a testament to DUT's commitment to lead through innovation, impact, and inclusivity.

PHUMEZA MSONGELWA



Pictured: DUT Team with learners from St Victor Secondary School.

DUT EMPOWERS MAHLABATHINI LEARNERS THROUGH CAREER GUIDANCE

The Durban University of Technology (DUT) Community Engagement in collaboration with Student Recruitment, Student Counseling, the Faculty of Health Sciences, and the students under the Uni4All Programme, successfully hosted a week-long career guidance programme for learners from 20 schools in the Mahlabathini CMC. The event ran from 31 March to 4 April 2025 as part of the Mahlabathini Schools Programme.

The primary aim of the Career Week was to equip matriculants with vital information about career options, online applications for tertiary education, and bursary opportunities. It also sought to inspire and motivate learners to take ownership of their futures and make informed decisions about their academic and professional paths.

The committed DUT team visited schools across six circuits, Ceza, Khanyisa, Mashona, Makhosini, Okhukho, and Ondini, engaging with eager learners who showed great interest in understanding career planning and the university application process for the 2026 academic year.

Mr Michael Zulu from the DUT's Student Recruitment emphasized the significance of the

initiative. "This programme really goes a long way in assisting learners with career choices and ensuring they submit their applications on time," he said.

He added that beyond providing practical information, the programme also aims to position DUT as a first-choice institution for higher education. The team further assisted learners with bursary application guidance, an essential step for many students seeking financial support.

Despite challenges such as poor road conditions, Zulu expressed his appreciation for the enthusiasm shown by the learners, "We were met with excitement and enthusiasm everywhere we went. All in all, it has been a very good week," he shared.

Ms Phumzile Monageng from Student Counselling and Health also highlighted the programme's value, "Career Week is important because it guides students in making informed and strategic decisions about their careers. It helps them gain a deeper understanding of their strengths, weaknesses, interests, values, and skills."

She further added, "The programme exposes learners to a wide range of career options across various institutions and provides valuable insights into different fields and job roles. The goal of this initiative has truly been achieved, as learners received the crucial information, they need to

make better decisions about the career paths they wish to follow in the future."

Ms Xoliswa Cele, the Chief Education Specialist at the Mahlabathini CMC, expressed heartfelt appreciation to the DUT team for its efforts, "I am so humbled by your extraordinary commitment to improving the lives of the Mahlabathini CMC community. I observed you in action and was convinced that this is your calling to change the lives of learners for the better," she said.

The week proved to be a great success, with learners receiving critical guidance and motivation from the DUT team. Senamile Sithole, a learner from Mvalo Secondary School, expressed her gratitude, "I really learnt a lot from DUT. Now I will be able to choose a career that best suits my personality."

Also, Lindokuhle Khumalo, a learner from St Victor High School, echoed this appreciation. "We learnt a lot from DUT. Now we can proceed with applications, have the advantage of added knowledge, and be more vigilant when applying."

DUT remains committed to empowering young people through access to quality information and meaningful engagement. Initiatives like Career Guidance Week are a testament to the university's mission to not only educate but uplift communities by paving the way for informed and inspired future leaders.

PHUMEZA MSONGELWA

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– MS PHUMZILE MONAGENG



Pictured: PMB Riverside Campus students after the certificate handover ceremony.

DURBAN UNIVERSITY OF TECHNOLOGY BROUGHT KEYS TO EXCEL TRAINING TO PIETERMARITZBURG FOR THE FIRST TIME

The Durban University of Technology (DUT) Community Engagement hosted the impactful *Keys to Excellence Training Programme* for the first time at Riverside Campus in Pietermaritzburg (PMB) on 14 and 21 June 2025.

Organised by the DUT Community Engagement in partnership with the Young Leaders Academy and IQRAA Trust, this third instalment, COHORT 3, brought a wave of excitement and curiosity among students who had never experienced the programme in their campus. Previously held at the Steve Biko Campus in Durban for COHORT 1 and COHORT 2 earlier in the year, the two-day programme was designed to equip students for a future shaped by artificial intelligence, automation, and innovation, with a focus on self-mastery, critical thinking, teamwork, and career readiness.

The two-day session, facilitated by Advocate Mohammed Vahed, the founder of the Young Leaders Academy, Vahed's dynamic and reflective approach challenged students to rethink their goals and adapt to the demands of a rapidly evolving job market, reminding them that, "It's not just about getting a job, it is about becoming adaptable, innovative, and prepared for a world that's constantly changing."

The atmosphere at Riverside Campus was electric, and students across different faculties embraced this rare and exciting opportunity to grow both personally and professionally in a supportive, empowering environment. The

feedback from students was overwhelmingly positive and heartfelt, showcasing just how impactful this experience was for them.

Xoliswa Khumalo, a third-year student in Business and Information Management, shared how the programme exceeded her expectations.

"I thought it would just be about leadership skills, but it was so much more. It taught us how to be innovative, how to use the skills we already have, and how to collaborate with others. I learned productive insights that will help me succeed in the workplace and life in general," she shared.

Nqobani Buthelezi, a final-year student in Public Administration and Management, admitted to arriving at the training with low expectations, only to leave deeply transformed. "I thought it would be a generic, one-size-fits-all approach to personal development. But I was impressed by the structured and practical tools provided to enhance productivity. The training was interactive and real-world oriented, and I walked away with strategies to improve my time management, goal setting, and overall productivity," said Buthelezi.

Sithembinkosi Shange, who is a final year accounting student, humorously recalled a mix-up about the programme's focus. "I thought this

was a Microsoft Excel workshop; I even brought my laptop! But it turned out to be an excellence training. I'm grateful I stayed because I left educated about the Fourth Industrial Revolution and the evolving labour market, and I now have a clearer direction for my future." As a Red Bull student marketer, Shange also brought an element of fun to the training by organizing a Crack the Can Hack activity, which left participants refreshed and engaged.

Bringing the Keys to Excellence training to Pietermaritzburg was more than just a change of venue, it symbolized DUT's broader commitment to equitable access and inclusive development for all its students, regardless of campus. The positive response from the PMB cohort confirmed the immense value such training adds to the student experience.

DUT Community Engagement continues to play a critical role in bridging academic knowledge with real-world skills and human-centered development. With the success of COHORT 3 in PMB, there is growing excitement about future cohorts expanding to more DUT campuses across KwaZulu-Natal.

SIHLE NZIMA

SOWING SEEDS OF CHANGE: DUT GRADUATE LEADS PROJECT GREEN FOR A GREENER, HEALTHIER KZN

From the lecture halls of the Durban University of Technology (DUT) to the fields of Empangeni, Mzomuhle Wandile Msweli, a graduate in Urban and Regional Planning, is cultivating more than crops, he is growing hope. With a vision rooted in sustainability and food security, Msweli, together with his team members Sphelele Msibi a third-year student in urban and regional planning and Luyanda Shabane, a third-year student in Biotechnology launched Project Green, a community-driven hydroponic farming initiative aimed at transforming urban and rural spaces into hubs of healthy, self-sustaining food systems.

Project Green was awarded second prize and received R20,000 at the 2024 DUT Engagement Showcasing and Pitching Awards. With this support, the team collaborated with Emerging Farmers (Pty) Ltd to deliver and install a functional hydroponic greenhouse in Empangeni. This included the delivery of essential farming equipment such as EC and pH meters, nutrient supplies, irrigation systems, seedlings, and a greenhouse structure.

"The idea began as a personal experiment to understand how hydroponics works," explains Msweli. "We reused plastic materials to build a system and later realised that this could grow into something bigger, a way to promote sustainable agriculture and recycling in our communities."

The project aimed not only to grow produce such as spinach and tomatoes but also to educate local schools on hydroponic systems and environmental responsibility. "We wanted to teach young people how to create their own systems, understand the science behind it, and even use our plants to nourish their own projects," Msweli added.

However, the journey has not been without setbacks. The project recently experienced a major challenge when the hydroponic plants were unfortunately exposed to a disease that devastated the crops. Despite efforts, the team was unable to salvage them. The disease proved resistant to treatment, and the project is currently on hold while recovery and replanting plans are considered.

"We were devastated by the loss," said Msweli, "but this is part of the journey of learning and growing. It's not a failure, it's a temporary pause."



Pictured: Mzomuhle Msweli at his hydroponic greenhouse.

Msweli extended special thanks to Dr Clive Greenstone, Senior Lecturer at DUT Town and Regional Planning Department whose expert advice played a key role in shaping Project Green's agricultural choices. "Dr Greenstone gave us valuable insight into the types of crops that are best suited for the KwaZulu-Natal region. His

guidance helped us refine our planting strategy."

Despite the pause, Project Green's vision remains strong. The team hopes to soon resume operations, reinforce the greenhouse structure, and continue their mission to empower communities through sustainable farming. They also plan to expand their reach, working with more schools and local partners to promote green skills and healthy living.

The impact of the project has already been felt, from job creation and educational outreach to a growing sense of environmental consciousness in the local community. Free training sessions, offered by Emerging Farmers, enhanced the team's understanding and functionality, laying the groundwork for future growth.

Msweli and his team remain optimistic. "We may be facing a setback, but we haven't lost the bigger picture," he said. "Project Green is about more than just growing plants. It's about growing knowledge, community, and sustainable futures. We are grateful to DUT Community Engagement and Emerging Farmers for believing in our vision."

In a time of climate uncertainty and rising food insecurity, Project Green reminds us that sustainable change begins at the grassroots level. With innovation, collaboration, and resilience, a greener tomorrow is not just a dream. It's already taking root.

PHUMEZAMSONGELWA



Pictured: Crops growing at the hydroponic greenhouse.



Pictured: Mr Cele (Department of Finance and Information Management), Mr Mnyandu, Mr Zakwe, and Mr Dumakude (Nursing Department).

CAREER EXPO OPENS NEW DOORS FOR MSINGA LEARNERS

The Siyakhula Msinga Empowerment NPC in partnership with The Durban University of Technology Nursing Department and the Department of Finance and Information Management successfully hosted an informative Career Guidance Expo in Msinga Top (Pano Hall) on the 28 May 2025.

Siyakhula Msinga Empowerment, a student led non-profit organisation aims to bridge the gap between rural learners and access to higher education, particularly in the field of nursing.

The Career Expo attended by Grades 9 and 12 learners from Zombane High School, Pano High School, Zwelinjani High School, and Nocomboshe Secondary School, was more than just a school outing, it was a rare and empowering opportunity to engage directly with university students and professionals who once stood in their shoes.

The event brought together learners, educators, with one shared goal: to bridge the information gap that so often limits the aspirations of youth in under-resourced areas. While the physical rollout of the expo was officially launched in 2025, it was a vision long in the making. Initially planned for 2024, the team had to delay the physical rollout due to funding challenges and instead launched online through social media platforMs. This year's in-person event marked a new beginning, one made possible through grit, collaboration, and grassroots support.

DUT's Nursing Department and the Department of Finance and Information

Management played a pivotal role in making the expo a success. Although the two departments led the presentations, they ensured learners received information about all DUT faculties, opening a broad spectrum of academic pathways. DUT nursing student volunteers also stepped up, sharing their own stories, answering questions, and encouraging learners to consider careers in healthcare, a gesture that added a personal and relatable touch to the day's programme.

"Organising the event from Pietermaritzburg presented logistical hurdles, but the unwavering support from the local school principals helped turn obstacles into triumphs. Mr Thusini from Nocomboshe Secondary School and Mr Zondi from Pano High School went above and beyond, even using their personal vehicles to transport chairs from neighbouring venues without any expectation of compensation. Their selflessness underscored the deep commitment of local educators to seeing their learners succeed." Said Simphiwe Mnyandu founder of Siyakhula Msinga Empowerment NPC.

Despite the challenges, the atmosphere at Pano Hall was electric with curiosity and

determination. Learners engaged eagerly with the presenters, asking questions, taking notes, and walking away with new clarity about subject choices, application procedures, and university life. For many, it was their first interaction with a university-affiliated event, a moment that shifted their understanding of what is possible.

This Career Guidance Expo was the first of its kind for Siyakhula Msinga Empowerment NPC, but it will certainly not be the last. Plans are already underway for two more expos later in the year, with a growing focus on reaching rural learners across KwaZulu-Natal. Invitations are already coming in, including one from Ulundi, showing just how much the demand for these types of interventions is growing.

The organisation is now seeking more partners and sponsors to help sustain and expand its work. But rather than asking for direct funding, they're calling for practical resources, laptops, cameras, and equipment that can support their educational efforts and generate income to ensure long-term financial sustainability.

PHUMEZA MSONGELWA

DUT HOSTS INSPIRING YOUTH IN STEAM DAY TO CELEBRATE YOUTH MONTH

In a vibrant celebration of Youth Month, the Durban University of Technology (DUT) Community Engagement hosted a successful Youth in STEAM Day at the Steve Biko Campus on 26 June 2025. The event welcomed eager learners from Sithengile Secondary School, as well as participants from the Ikamva Youth Programme and the Umkhumbane Schools Project.

The aim of the day was to inspire youth to explore opportunities in Science, Technology, Engineering, Arts and Mathematics (STEAM) and to give the learners a glimpse of university life. The programme was packed with informative presentations, live demonstrations, and engaging performances — all designed to ignite curiosity and fuel ambition among the young attendees.

The day began with a warm welcome from Ms Phumzile Xulu, the Engagement Practitioner at the DUT Community Engagement. She encouraged learners to absorb the knowledge shared during the event and underscored the growing importance of the STEM fields, particularly in light of the rise of artificial intelligence.

“The world is changing rapidly,” said Xulu. “It is important that we use critical knowledge and critical thinking to adapt and lead in this evolving landscape.”

One of the highlights was a presentation by Dr Bongumenzi Mncwango, Senior Lecturer in the Department of Industrial Engineering. He introduced learners to the world of industrial engineering, with a focus on manufacturing, lean systems, and supply chains. Dr Mncwango explained how engineering is all about improving

systems and solving real-world problems. He also offered guidance on subjects required for pursuing engineering and outlined the various disciplines within the field.

Adding a social innovation lens to the day was Dr Nokuthula Mavela from DUT’s Centre for Excellence in Learning and Teaching. Her session on “Developing Innovative and Sustainable Products for Social Impact” encouraged learners to become change-makers.

“We must solve our own problems as society, as Africa,” said Dr Mavela. She introduced the concept of design thinking and urged girls in particular not to be discouraged by gender stereotypes in STEM fields.

Dr Farai Dziike from the DUT’s Technology Transfer and Innovation (TTI), impressed the audience with a presentation on transforming biodegradable material into building materials, a clear example of science meeting sustainability. He emphasized the need for students to grow into adaptive graduates.

“We don’t want people to study just to find jobs. People must study to innovate and create jobs,” said Dr Dziike.

The day also included a moving performance by

DUT drama students, focusing on the role of youth and the power of education. The event concluded with an exciting live science demonstration by the DUT Chemistry Department, where learners got hands-on exposure to chemical experiments in a real lab setting.

Learners were visibly inspired by the day’s experiences. Nkanyiso Ntombela from Sithengile Secondary School said,

“I learned that anyone can choose from a variety of subjects in order to pursue a career of their choice.”

Anele Xulu from Wiggins Secondary School, who enjoyed the dramatic arts segment, shared,

“The performance really excited me. I also study dramatic arts at school and would love to pursue it in university.”

Melokuhle Dlala, from Umkhumbane Secondary School, expressed his ambition to become a problem-solver.

“I want to be innovative and be part of the solution, not the problem,” he said. “I am grateful to DUT for this wonderful experience and hope to be a student here in the future.”

PHUMEZA MSONGELWA



Pictured: Learners who attended the Youth in STEAM Day.



Pictured: Learners during the DUT Youth in STEAM Day 2025.

Engagement at DUT is the portfolio under the office of the Deputy Vice-Chancellor: Research Innovation and Engagement (DVC-RIE), Durban University of Technology (DUT). The Engagement Office champions initiatives, efforts and activities that focus on establishing the University as a responsible, relevant and active partner of the community in addressing the needs of society. Through engagement, the University facilitates collaboration among DUT staff, students, alumni and the community for meaningful and impactful university-community engagements. This newsletter seeks to highlight and showcase community engagement projects that have been initiated by staff and students as part of service learning, community-based research, scholarly service and community outreach or volunteering efforts. Showcasing these projects recognises staff, students and social partners for their exceptional commitment to community engagement in line with the DUT strategy, ENVISION2030.

The DUT Community Engagement invites you to report on community engagement activities by submitting articles for publication in the following newsletter (Quarter 2 2025) via the following link:

[Click here](#)

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