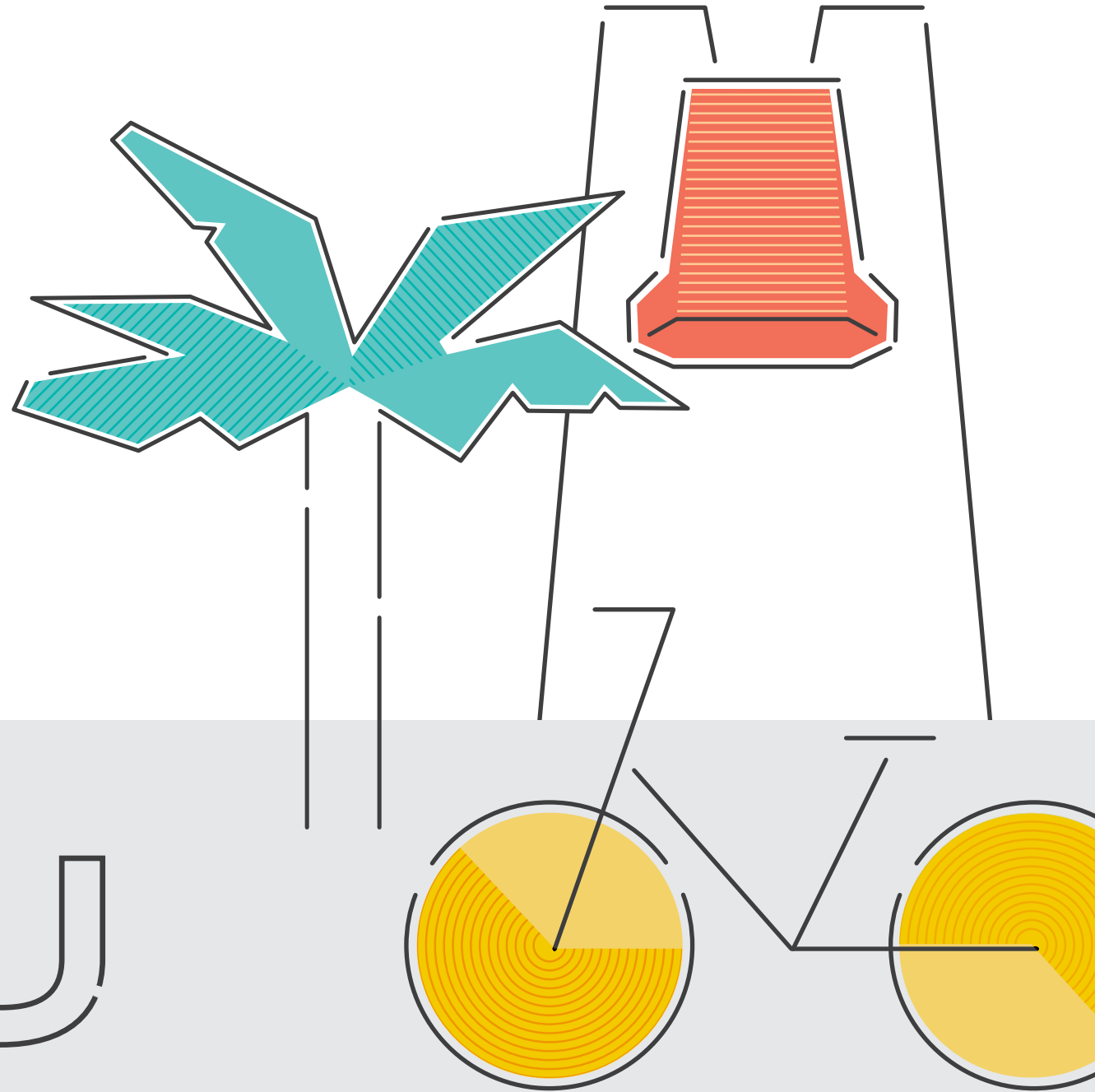


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Social Responsibility and Sustainability Report



NTU

Content

1 Preface

4 CH.1 About NTU

7 CH.2 NTU Sustainability Governance

Governance Structure and Governance Diversity 8

Endowment Management and Sustainable Investment 11

14 CH.3 Campus Sustainability

Our Academic, Research Influence and Sustainable Action 15

Environmental Sustainability Governance at NTU 21

Diversity, Well-being, and Campus Support 28

34 CH.4 Social Impact

69 Appendix

STARS Content Index



About This Report

Reporting Framework

This report has been prepared according to the Sustainability Tracking, Assessment & Rating System (STARS) framework developed by the Association for the Advancement of Sustainability in Higher Education (AASHE).

Reporting Period

The data and information disclosed in this report mainly cover the period from January 1 to December 31, 2025. Academic Year (AY) information covers AY2024 and the first semester of AY2025 (from August 1st, 2024, to January 31st, 2026). For comprehensiveness, some data presented in this report include information from 2024, before AY2024, or the latest available information as of 2026.

Reporting Boundary and Scope

This report covers the sustainability efforts and performance of National Taiwan University (NTU). Some performance data also include affiliated institutions of NTU.

Basis for Calculations

All information and statistical data presented in this report are based on NTU's own statistics and surveys. Financial figures are expressed in New Taiwan Dollars (NTD). The collection, measurement, and calculation methods of data are primarily based on applicable regulations; where no specific local regulations apply, international standards are referenced.

Publication

This report is NTU's seventh Social Responsibility and Sustainability Report. Previous reports and this report are regularly published and available for browsing and download on the NTU website.

A Word from the President

Confronted by rapidly evolving technologies and shifting global dynamics, the stakes have never been more serious nor the responsibilities more resounding for higher education communities. At National Taiwan University (NTU), we firmly believe that higher education goes beyond talent cultivation; it is a driving force for advancing societal progress and addressing contemporary challenges. As Taiwan's leading university, NTU continues to advance interdisciplinary innovation, international engagement, and sustainable development as its core priorities. By actively engaging with global issues, we persevere in contributing to Taiwan's persistent progress and to the world's sustainable future.

In 2025, NTU ranked 14th globally in the Times Higher Education (THE) Impact Rankings, achieving our best performance in history, with five Sustainable Development Goals (SDGs) placing within the global top 20. NTU also won the Times Higher Education Awards Asia 2025 for "Outstanding Student Support" and the 2025 HCM Excellence Awards presented by the internationally renowned Brandon Hall Group. These international accolades reflect NTU's steadfast commitment to fostering talent cultivation, student support, and sustainable practices.

With an eye on sustainability governance and campus engagement, NTU continues to advance its on-campus greenhouse gas inventory efforts, monitor progress toward carbon neutrality, and promote a sustainable campus through cross-departmental collaboration. In observance of the circular economy, in 2025, NTU became the first university in Taiwan to introduce a campus-wide shared umbrella system. The implementation, originating from a student proposal and actualized through coordinated efforts across multiple units, has expanded to over 40 campus rental stations, demonstrating the university's collective commitment to sustainable living. Furthermore, NTU continues to strengthen partnerships with local communities, businesses, and international partners, encouraging faculty and students to translate academic expertise into social value, to address societal needs, and to shoulder the University's Social Responsibility with concrete action.

The above accomplishments would not have been possible without the enduring dedication and support of our faculty, staff, students, alumni, and partners. Looking ahead, NTU will continue to uphold its academic mission and social responsibility through distinctive research, stronger industry-academy cooperation, and international partnerships. Wielding both knowledge and action, we rise to the defining challenges of our time, advancing steadily through a rapidly changing world. NTU remains determined to shoulder the vital social responsibilities expected of higher education institutions, as we march toward the magnificent milestone of our centennial anniversary in 2028.

President

Wen-Chang Chen





1

About NTU

NTU at a Glance

Faculty and Students

17,568 Undergraduate Students

17,367 Graduate Students

2,088 Full-time Faculty

1,761 Full-time Staff ¹

Academics

17 Colleges ²

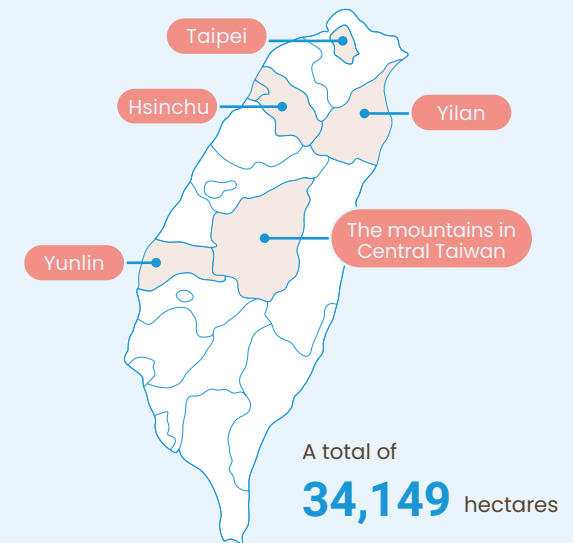
61 Departments

154 Graduate Institutes

283 Specialization Programs ³



Total Campus Area



Research Results

100+ Research Centers

30+ Startups



Global NTU

729 University-level ⁴ Partner Universities

781 Agreements

(Figures of 2025)

Note 1 Refers to the total number of quota-based and non-quota-based staff recorded in the 2025 University Institutional Database, including campus security personnel, technicians, and maintenance staff.

Note 2 Including School of Political Science and Economics, Graduate School of Advanced Technology, D-School, Center for General Education, International College, and SPECS.

Note 3 Specialization Program is a series of programs, each consisting of 12 to 15 credits, representing a core competence or an innovation trend in a professional field.

Note 4 University-level partner universities and agreements refer to NTU's partnerships with overseas educational and research institutions assured with mutually signed agreements of academic collaboration effective as of 2025.

International Rankings and Awards



THE (Times Higher Education)
Impact Rankings 2025 [link](#)

in the world

#14

3 GOOD HEALTH
AND WELL-BEING



#2

in the world

16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS



#12

in the world

9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



#13

in the world

14 LIFE
BELOW WATER



#9

in the world

2 ZERO
HUNGER



#18

in the world



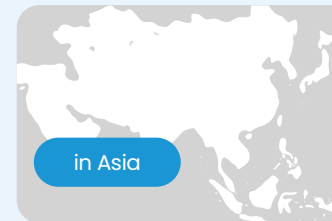
WORLD
UNIVERSITY
RANKINGS
SUSTAINABILITY

QS World University Rankings:
Sustainability 2026 [link](#)



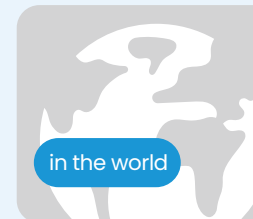
in Taiwan

#1



in Asia

#4



in the world

#72

Domestic Rankings and Awards

2025 Commonwealth Magazine University Citizen Survey



#1
in the “Public
University Group”

2025 Global Views University Social Responsibility (USR) Awards



Excellence Award – Industry Collaboration Category
*Partnering with Yunlin: Deepening Industrial Linkages in
Specialized Agricultural Production Areas*

2025 Taiwan University Sustainability Awards



#1
in the “Top 10
Sustainable Model
Universities in Taiwan”



Excellence Award – Sustainable Curriculum Category
Menstruation: Theory, Perspectives, and Action



NTU Sustainability Governance

- 2.1 Governance Structure and Governance Diversity
- 2.2 Endowment Management and Sustainable Investment



2.1 Governance Structure and Governance Diversity

I. Governance Structure

To exercise the autonomy and academic freedom granted by the University Act, NTU has established the “National Taiwan University Organizational Charter.” The Charter defines the organizational governance structure, outlining the roles of university leadership, decision-making councils, as well as academic and administrative units. NTU is committed to upholding moral integrity in university governance and strives for administrative efficiency. The NTU Affairs Meeting serves as the University’s supreme decision-making body. To ensure inclusivity and balanced decision-making, the meeting includes representatives from NTU administrators, faculty, staff, and the student body.

Important Decision-Making Bodies and Meetings at NTU ¹

Level	Name	Responsibilities
 Leadership in University Affairs	NTU Affairs Meeting	Reviewing university development and budget; establishment, modification, merger, and discontinuation of colleges, departments, and affiliated institutions; important matters and regulations concerning university affairs; matters instructed by the president; and other important proposals.
	NTU President Selection Committee	Selecting the new president.
 Decision-Making Councils	Administrative Meeting	Making decisions on matters specified in the National Taiwan University Organizational Charter and other important administrative matters.
	Academic Affairs Meeting	Discussing important academic affairs and related rules and regulations.
	Other Committees	Various committees are established according to laws and regulations, such as the Teacher Evaluation Committee, Student Counseling Committee, and Institutional Development & Planning Committee.

Note 1 | For the composition of each meeting, please refer to the [NTU Organizational Charter](#).

Composition of Participants in NTU Affairs Meetings and Administrative Meetings in AY2025

Unit: Person

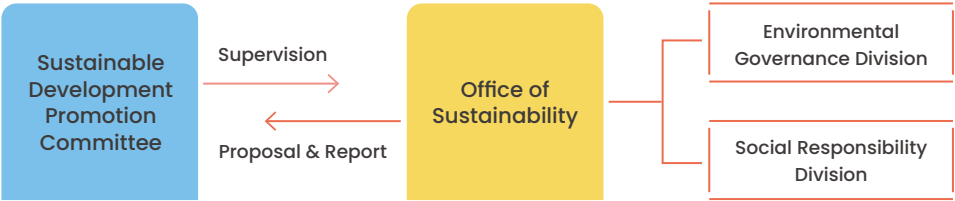
Representatives	NTU Affairs Meeting	Administrative Meeting
Total	172	40
Academic Staff ²	145	33
Non-academic Staff ³	9	7
Student Representatives ⁴	18	Invited based on agenda items
Female Representatives	35	12

- Note 2 | Academic staff includes campus administrators, representatives from colleges and non-college units, faculty, researchers, and teaching assistants.
- Note 3 | Non-academic staff includes administrative staff and janitors.
- Note 4 | Student representatives are invited to attend the Administrative Meeting whenever proposals concerning students’ rights and obligations are considered.



II. NTU Sustainability Governance Framework

To effectively integrate the research capabilities of its colleges and strengthen the capacity of its administrative units to implement sustainability initiatives, NTU established the Sustainable Development Promotion Committee and the Office of Sustainability. These bodies are responsible for planning and advancing NTU’s sustainable development agenda, underscoring NTU’s commitment to sustainability. Chaired by the NTU President, the Sustainable Development Promotion Committee comprises 15 members, including administrative executives, student representatives, and faculty members from relevant disciplines. Its responsibilities include reviewing and overseeing strategies for NTU’s Sustainable and Smart Campus and evaluating the implementation outcomes of related action plans. The Office of Sustainability comprises two divisions: Environmental Governance and Social Responsibility. Internally, it coordinates with administrative and academic units to plan and implement sustainability initiatives; externally, it builds partnerships with businesses and communities to jointly address societal challenges, ensuring that academic research better responds to societal needs and delivers meaningful impact.



Name	Function
<u>Sustainable Development Promotion Committee</u>	Comprises 15 members, including NTU administrative executives, student representatives, and professors from relevant fields, and is chaired by the NTU President. The Committee meets once every semester to review and supervise Sustainable and Smart Campus strategies and evaluate the implementation of action plans.
<u>Office of Sustainability</u>	A top-level university administrative unit with Environmental Governance and Social Responsibility divisions. Internally, it coordinates with administrative and academic units to plan and promote sustainable development action plans. Externally, it participates in social sustainability efforts and extends its influence.



III. Stakeholder Communication

NTU engages with a wide range of stakeholders, including internal faculty, staff, and students, as well as external organizations, communities, and individuals. These stakeholders have varying degrees of influence on NTU's operations, education and research, and environmental and social performance. To enhance the transparency of university governance, NTU provides diverse channels for stakeholder engagement. These channels enable stakeholders to provide feedback, participate in campus decision-making, and contribute to shaping a more inclusive and sustainable campus.

Major public communication channels of NTU

- | | |
|--------------------------------------|--------------------------------|
| Official NTU website | NTU FB |
| NTU Annual Reports | NTU YouTube |
| NTU e-Newsletter | NTU HIGHLIGHTS |
| NTU Spotlights | NTU BEATS |

Stakeholder	Faculty	Students	Staff	Government agencies	Alumni	Students' parents	Business enterprises	Media	Partners	Local communities/ general public
NTU Contact	- College and department offices - Administrative departments	- College and department offices - Administrative departments - Student Associations & Graduate Student Association	- Personnel Department - NTU Staff Club	- Administrative departments - College and department offices	- NTU Alumni Center - Career Center, Office of Student Affairs - Office of Financial Affairs - College and department offices	- Office of Student Affairs - College and department offices	- College and department offices - Office of Research and Development - Career Center, Office of Student Affairs	Media & Press Center, Secretariat	- Office of Sustainability - College and department offices - Office of Research and Development - Office of International Affairs - Office of NTU System	- Visitor Center, Secretariat - University Library/ NTU Museums - Office of General Affairs - Office of Student Affairs - Campus Planning Office - College and department offices
Form of Communication	- University/ Department/ Institute Affairs Meetings - Administrative Meetings and Committees - NTU Suggestion System	- University-wide faculty and student forums - University/ Department/Institute Affairs Meetings - Administrative Meetings and Committees - NTU Suggestion System - Meetings with advisors - Opinion surveys	- NTU Suggestion System - Labor-Management meetings - Faculty and Staff Recreation Activities Promotion Committee	- Official correspondence - Evaluations and on-site visits - Project grants and subsidies - Research reports and publications - Advisory meetings	- Alumni Association - Alumni reunion activities - NTU Alumni Bimonthly - Alumni e-Newsletter - NTU career fairs - Opinion surveys	- Student recruitment seminars - Parents Day for freshman students	- Industry-academia collaboration - Student internships - NTU career fairs - Employer surveys	- Press releases - Press conferences	- International sustainability alliances and networks - Project collaboration - Academic collaboration agreements - NTU System Consensus Meeting Workshop	- Guided tours - University Affairs Development Planning Committee - Student volunteer services - MOE USR Projects

2.2 Endowment Management and Sustainable Investment

In fulfilling its University Social Responsibility (USR), NTU's Endowment Fund is managed in alignment with the Principles for Responsible Investment (PRI) and the spirit of the United Nations Sustainable Development Goals (SDGs), incorporating Environmental, Social, and Governance (ESG) considerations into investment decision-making. The NTU Investment Management Committee comprises eight internal and external members with expertise in investment management and professional credibility in financial management, including three administrative executives and five external members. Based on the "NTU Guidelines for Investment Income and Expenditure Management," the Committee formulates investment guidelines, policies, and asset allocation principles for the following year. For details, please refer to [NTU's annual Financial Planning Report](#).

Principles of NTU's Responsible Investment Policy

Fundamental Principles

- The emphasis of investment in stocks, corporate bonds, and convertible corporate bonds issued by listed and over-the-counter companies must be placed on the enterprise's sustainable and sound operation, environmental protection, and full commitment to social responsibility.
- The sustainability ratings of the investee over the past two years must meet a certain standard, as assessed by credible ESG rating agencies.
- The tangible impact of Corporate Social Responsibility must be taken into account.
- Investment projects shall be aligned with the NTU's USR vision.
- The Endowment Fund should increase the diversity of investment portfolios in sustainability-related financial instruments to achieve risk diversification.

Environmental Principles

- Investees must address climate change. Enterprises with proposed net-zero roadmaps or carbon reduction plans are priority investments.
- Investees must prioritize waste reduction and renewable energy alongside other environmental sustainability issues.

Social and Corporate Governance Principles

- Should the enterprise's ESG results be relevant to its products or expertise, investments are prioritized.
- Investees must uphold business ethics, adhering to fair trade principles and respecting intellectual property rights.
- Investees must promote gender equality, gender diversity, and human rights.

NTU Endowment Fund Investment Portfolio ¹

Amounts in NT\$1,000

Year		2023		2024		2025	
		Amount	%	Amount	%	Amount	%
Investment sectors and the amounts invested	Electronics	1,019,645	37.8%	1,667,429	48.7%	2,667,751	59.7%
	Telecommu- nications	501,373	18.6%	549,731	16.0%	549,817	12.3%
	Food Distribution	141,715	5.2%	148,244	4.3%	135,731	3.0%
	Raw Materials	77,943	2.9%	85,318	2.5%	89,375	2.0%
	Financial	429,918	15.9%	590,795	17.2%	666,558	14.9%
	Automobile Manufacturing	28,200	1%	44,415	1.3%	8,730	0.2%
	Construction	40,986	1.5%	25,565	0.7%	26,133	0.6%
	Funds	460,234	17.0%	314,455	9.2%	327,658	7.3%
Total Endowment Fund Investment ²		2,700,014	100%	3,425,952	100%	4,471,753	100%

Note 1 | The amounts and percentages for each sector are rounded.

Note 2 | These amounts include only investments in stocks and funds.

NTU regularly reviews and updates the investment principles of its sustainable investment policy at Investment Management Committee meetings, examining major ESG issues across industries, responsible investment principles, corporate governance, and sustainability-related events, and assessing whether the Endowment Fund's investments align with the spirit of USR, ESG, and PRI. Since 2019, NTU has gradually divested its holdings in high-polluting industries and completed full divestment from high-polluting and high-carbon-emitting industries in December 2020, becoming the first university in Asia to commit to divesting from such industries. In 2018, sustainable investments accounted for approximately 59.9% of the Endowment Fund. After seven years of continued efforts, this proportion increased to 83.6% in 2025. NTU will continue to promote sustainable investment by allocating the Endowment Fund to companies and funds with outstanding sustainability performance, fulfilling its social responsibility and advancing sustainable development.

NTU's Screening Principles for Stock and Fund Investments ¹

Individual stocks

NTU prioritizes investments in companies demonstrating sustainable and sound business practices, environmental stewardship, social responsibility, and strong ESG and CSR performance. NTU references evaluation indicators from reputable domestic and international institutions, including *CommonWealth Magazine's* CSR ranking, the Taiwan Sustainability Index, and TDCC's Investor Relations Platform.

Funds

If a fund holds shares in companies with controversial ESG practices, the shareholding of any individual stock shall not exceed 5%, and the total shareholding in such companies shall not exceed 20% of the fund's portfolio. If a fund's holdings violate these principles, and no actions are taken to rectify the situation after communication and coordination with the investment trust, NTU will immediately redeem the fund.

Note 1 If there are concerns regarding a company's sustainability and governance practices, NTU will consider taking practical actions. These actions may include reducing or divesting holdings if engagement and improvement opportunities within a reasonable timeframe are not possible.

Ratio of Sustainable Investment

Unit : NT\$1,000



Year	2023	2024	2025
Total value of the investment ²	2,700,014	3,425,952	4,471,753
Sustainable investment ³	2,235,074	2,845,380	3,739,332
Ratio of sustainable investment	82.8%	83.1%	83.6%

Note 2 Investment in equities and funds only.

Note 3 Including investment in corporations and mutual funds with benchmark sustainability performance.





Campus Sustainability

- 3.1 Our Academic, Research Influence and Sustainable Action
- 3.2 Environmental Sustainability Governance at NTU
- 3.3 Diversity, Well-being, and Campus Support

3.1 Our Academic, Research Influence and Sustainable Action

I. Cultivating Transdisciplinary Leaders in a Learner - Centered Environment

NTU is committed to cultivating professional, internationally minded, and socially responsible talents. As part of our academic innovation efforts, institutional policies and learning environments are reformed to be student-centered. Through the “Future NTU Initiatives,” NTU has gradually launched flexible and diverse learning pathways, including Specialization Programs, the University Interdisciplinary Bachelor Program, Undergraduate Honors Programs, Interdisciplinary Credit Programs, and Exploratory Learning Projects; students are encouraged to transcend disciplinary boundaries and develop their personalized paths. In 2024, NTU established the “ESG (Environmental, Social, and Governance) Program” and the “Accounting Profession and Career in Sustainability Program” to meet the growing demand for interdisciplinary talent in sustainable development and industry.

To tackle global issues and cultivate talent, NTU puts problem-based learning at the center. The program “NTU Beyond Borders” enables educators to incorporate international collaborations in their lectures, where students increase their international mobility and interdisciplinary abilities through online cooperation, cross-cultural discussions, and overseas practical experiences. Through international study groups and field-based active-learning projects, students tackle real issues by developing skills in exploring questions, integrating knowledge, and implementation.

NTU has been establishing Future Classrooms and introducing innovative teaching methods to improve the interactive and transdisciplinary learning experience. With several departments and programs finishing their own Future Classrooms in 2025, the total number of future classrooms in NTU has risen to 70, paving the way for a smart campus that supports innovative teaching. In 2025, Times Higher Education awarded NTU with the Outstanding

Support for Students Award, exemplifying our long-standing efforts in centering our students and supporting multidimensional learning and career development.



As part of the 2025 Waseda University International Study Group, students visited NITORI Holdings in Tokyo, Japan for a corporate visit.

Achievements for NTU's Educational Resource Sharing

Platform	Description
NTU OCW	NTU OCW offers 309 high-quality courses, with more than 36 million views and 343,000 subscribers on its YouTube channel. Course materials are not only freely available for self-learning by the general public but also serve as valuable resources for students, educators, and researchers worldwide, supporting supplementary learning, curriculum development, and research.
NTU MOOCs	Through the Coursera platform, NTU provides access to its exceptional courses for global learners, transcending geographical limitations and promoting the free flow of knowledge. Currently, 82 courses are available, with a cumulative 1,742,987 enrollments and 93,877 course completions.
NTU Speech	With a rich collection of faculty expertise and academic resources, NTU regularly hosts lectures and seminars on a wide range of topics. To preserve these valuable educational resources, the University established the NTU Speech website. To date, the platform has accumulated more than 3,300 videos, while its YouTube channel has garnered nearly 27 million views.
NTU MOOC Project for High School Students	Launched as a pilot program in 2019, this initiative shares NTU's OCW and MOOC courses as elective learning resources for high school students' self-directed learning. In 2022, the program expanded nationwide to include all public and private high schools. To date, 150 high schools have participated, with approximately 15,000 course enrollments. Each semester, NTU professors visit high schools in remote areas to participate in both in-person and online seminars, engaging in discussions with students and answering questions about university courses and higher education opportunities. By the end of 2025, seven high school exchange seminars had been held, reaching nearly 400 participants.

Fostering Sustainability Awareness on Campus

NTU Orientation Camp

Since 2008, NTU has organized Orientation Camps annually. Through a diverse array of lectures and events, the Orientation Camp acquaints first-year students with NTU's resources and university life. The 2024 and 2025 editions of "Real NTU," an event of the Orientation Camp, featured QR Codes replacing physical props and cards to reduce paper usage. In addition, programs on NTU Lectures and the Fresher Channel featured topics of sustainability, environmental protection, gender equality, multiculturalism, and campus life, among others; experts were invited to share their insights on eco-friendly actions via podcast. These efforts aimed to equip first-year students with a sense of respect for others, inclusiveness, and public participation.

On-the-job Training for Faculty and Staff

Based on the professional development needs of faculty and staff, NTU provides a wide range of educational and training resources. NTU encourages faculty and staff to participate in sustainability-related courses covering topics such as renewable energy development, resilient cities, disaster preparedness, ecosystems, and circular economy. These courses aim to broaden and deepen their understanding of sustainability. The annual New Faculty Orientation is carried out through a series of intensive training workshops, with lectures on NTU vision and policies, research resources allocation, course design, effective teaching, student counseling, and class management. The program also includes discussions on action plans for emerging issues and an introduction to administrative resources available to faculty members. This systematic and interdisciplinary empowering design allows new faculty members to quickly grasp the nature of teaching and research at NTU while encouraging them to employ innovative teaching methods, bring sustainability into classrooms, and foster a thriving campus culture informed by sustainability.



NTU's 2025 Orientation Camp featured team challenges, a music festival, a student club fair, and peer mentoring sessions.



Future Classrooms create learning environments that support innovative teaching.

II. Supporting Social Development with Academic Research

Building on its strong foundation of research excellence, NTU continues to support its faculty and students in enhancing the visibility of their scholarly achievements and expanding their global impact. At the same time, NTU remains deeply committed to engaging with local communities and addressing the critical challenges facing the nation and society. By translating academic expertise into public value, NTU strives to advance societal progress and sustainable development. Through government-commissioned studies and practice-oriented projects, NTU leverages its academic expertise to inform national policies and address societal challenges. In 2025, all colleges and research centers in NTU conducted a total of 3,810 research projects, 3,148 of which came from the government. Of these, 536 were related to sustainability, demonstrating the close link between research studies and public policy. In 2025, NTU published 6,359 papers in SCI, SSCI, and A&HCI. To increase accessibility, NTU also published 4,038 studies in Open Access journals.

In recent years, NTU has actively established ties with top institutions around the world. As of 2025, there have been more than 50 NTU International Cooperation Add-on Projects and 8 International Joint Research Centers. In addition, NTU co-established 2 joint international laboratories, the Max Planck-IAS-NTU Center for Particle Physics, Cosmology, and Geometry, and the France-Taiwan Quantum Center for the Alain Aspect Program. These collaborations advance international research and talent cultivation.



The Max Planck Society, the Institute for Advanced Study (IAS), and NTU co-established the Max Planck-IAS-NTU Center for Particle Physics, Cosmology, and Geometry.

Sustainability-Related ¹ Research Projects in 2025

College	Number of Projects
College of Liberal Arts	11
College of Science	60
College of Social Sciences	45
College of Medicine	53
College of Engineering	78
College of Bioresources & Agriculture	145
College of Management	27
College of Public Health	26
College of Electrical Engineering & Computer Science	11
College of Law	16
College of Life Science	24
Others	40
Total	536

Sustainability-Related Projects Commissioned by Government in 2025

Central govt.	479	3,104
Local govt.	13	44
Number of Sustainability-Related Projects		Total Projects

NTU's Publications² in 2025

Journals	Number of Publications
SCI (Science citation index)	5,937
SSCI (Social science citation index)	719
A&HCI (Arts & Humanities Citation Index)	57
Total ³	6,359

Note 1 Data retrieved using sustainability-related keywords defined by NTU.

Note 2 The number of articles and reviews retrieved from the database of Web of Science as of April 20, 2026.

Note 3 The same publication may be categorized as SCI, SSCI, and A&HCI at once. After double counting has been removed, the number of NTU's publications in Web of Science totals 6,359.

In 2025, NTU, the International Peace Foundation, Academia Sinica, and several Taiwanese universities jointly launched the Taiwan Bridges Program, inviting more than 30 Nobel Prize laureates to Taiwan for exchanges from 2025 to 2026. NTU also initiated the establishment of the Taiwan Higher Education–Nobel Laureates Association, connecting universities and industry partners to build a premier platform for interdisciplinary exchange and further strengthen NTU's global academic connections and influence.

Initiatives and Achievements in Technology Transfer and Startup Incubation

Initiative	Description
 Startup Encouragement Measures	To foster innovation, entrepreneurship, and interdisciplinary/inter-university collaboration, NTU established the "NTU Seedling Program Funding" initiative in 2023. The program strengthens NTU's innovation ecosystem by supporting startup teams in validating innovative ideas and developing prototypes, facilitating the commercialization of research outcomes for industry and society. Since its launch, the program has held three to four selection rounds annually, with 32 teams selected for implementation by the end of 2025.
 Spin-off Company Establishment	To encourage the commercialization of research outcomes and drive industrial innovation, NTU has, since 2016, identified research teams with entrepreneurial potential and provided entrepreneurial guidance and resources to support startup development. As of 2025, 40 startups have been established through the commercialization of NTU research outcomes.
 Technology Transfer	The "NTU Online Technology Information & Marketplace System" showcases nearly 3,000 patented technologies developed by NTU, enabling businesses to access and utilize university research outcomes. Through patent and technology licensing and transfer, NTU supports industrial innovation and commercialization. From 2024 to 2025, over 20% of NTU's patents were licensed, with more than 220 technology transfer cases and over NT\$250 million in annual intellectual property revenue on average.
 Innovation Incubation	NTU's Shuiyuan Campus houses an Incubation Center with approximately 6,240 square meters of space, providing short- to medium-term support for businesses and laboratory facilities. The center has nurtured over 250 companies, with eight companies successfully completing initial public offerings (IPOs). By connecting incubated companies with NTU's entrepreneurial resources and research capabilities, the center offers comprehensive and tailored services.



The opening seminar of the Taiwan Bridges Program featured Professor Sir Andre Geim, 2010 Nobel Prize laureate in Physics.



The Taiwan Bridges Program and NTU Raymond Soong Chair Professorship of Distinguished Research featured Professor Donna Strickland, 2018 Nobel Prize laureate in Physics.

III. Community Engagement and Sustainability Promotion Led by Students

NTU has more than 400 student clubs active on and off campus each year. During their studies, approximately 9,515 students participate in service-learning courses, contributing to society through action. In 2025, student clubs organized 50 domestic and international volunteer service teams, with approximately 1,894 students serving around 3,614 people. Through curricular and extracurricular activities, students applied their expertise to community service and social practice.

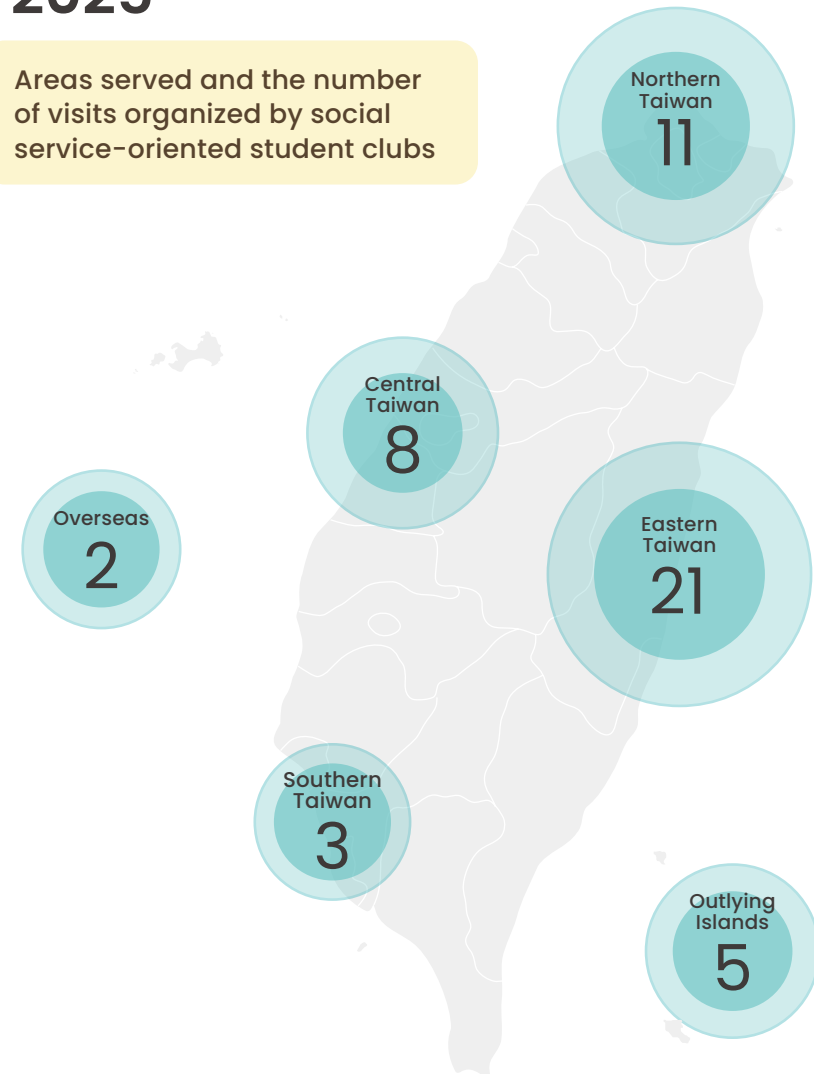
NTU continues to promote the “Green Campus Initiative” by encouraging student clubs to engage in environmental sustainability actions through funding mechanisms. Student clubs such as NTU Trail Action, NTU Roots & Shoots, NTU CDvolunteer, and NTU Lifeguard have organized sustainability-related activities, demonstrating youth engagement in environmental issues and their commitment to action.



Four 2025 recipients of the “Social Devotion Special Award” with the NTU President. The award encourages students to apply their expertise to address social needs and promote altruism.

2025

Areas served and the number of visits organized by social service-oriented student clubs



One-Day Hand-Built Trail Restoration

NTU Trail Action

Unlike trail works that rely heavily on machinery, hand-built trails use simple tools and local materials to achieve safe, comfortable, and sustainable restoration. Guided by trail instructors and assistants, each group collaborated to repair the Zhongpushan Hiking Trail, improving its safety, accessibility, and walking experience.

Enhance the trail's safety and accessibility by improving the trail facilities, installing water drainage, and laying wooden stairs.

Agri-food Seminar:
Milk Price Wars & Behind the
Scenes of an Agriculture Journalist

NTU Roots & Shoots

Agriculture is often overlooked in sustainability discourse. As urban life distances people from the land, food serves as an important medium for reconnecting with nature. On March 25, 2025, NTU Roots & Shoots hosted an agri-food seminar featuring an agriculture journalist, introducing Taiwan's dairy industry and encouraging reflection on consumption habits and environmental impacts.



The interdisciplinary dialogue allowed participants to rethink how their actions may affect the agricultural industry and the environment.

WARM –
We All Reach MeaningfullyDepartment of Bio-Industry
Communication and Development
Student Association

The fifth Bio-Industry Communication and Development (BICD) Expo, themed "WARM – We All Reach Meaningfully," used interactive exhibitions to highlight the value of nature, promote ecological conservation, and provide an innovative approach to stress relief and mental well-being.

An exhibition from WARM – We All Reach Meaningfully.



Wushi Harbor Beach Cleanup

NTU Surf Club

On May 3, 2025, NTU Surf Club held a beach cleanup at Wushi Harbor, removing coastal waste and promoting ocean conservation. The event attracted 255 participants, who collected approximately 640 kg of marine debris, including fishing nets, plastic bottles, and Styrofoam.

Participants cleaned the beaches and learned the importance of ocean conservation.

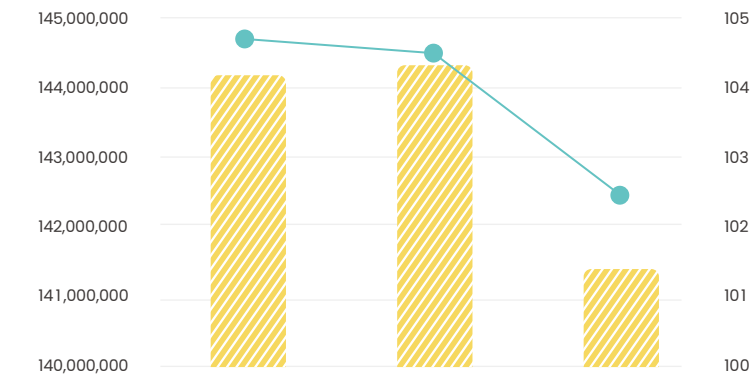


3.2 Environmental Sustainability Governance at NTU

I. Low-carbon Campus

NTU actively promotes energy conservation and carbon reduction to achieve its 2048 carbon neutrality goal. Through ongoing initiatives such as replacing outdated air conditioners, upgrading to energy-efficient lighting, improving heat pump efficiency, and monitoring electricity use in campus buildings, NTU is committed to creating a low-carbon campus. To date, NTU has 13 certified green buildings, and all new construction projects are required to achieve at least the Bronze-level Green Building Certification.

Electricity Consumption and Electricity Usage Intensity (EUI) in the last three years¹



Year	2023	2024	2025
Electricity Consumption (kWh)	144,347,273	144,587,463	141,360,913
EUI (kWh/sq m) ²	104.71	104.49	102.42

Note 1 Statistics of NTU's Main Campus, Shuiyuan Campus, College of Public Health, College of Medicine (excl. NTUH), College of Social Sciences' old building, and Zhubei Campus.

Note 2 Covering a total floor area of 1,378,500 m² in 2023, 1,383,710 m² in 2024, and 1,380,267 m² in 2025.

Green Building Certifications at NTU





The Energy-Efficient Lighting Upgrades project at NTU Sports Center

The floodlights at the NTU Sports Center had high energy consumption and were nearing the end of their service life, with maintenance needs expected to increase. To promote energy conservation and carbon reduction, NTU upgraded the lighting systems with energy-efficient LED fixtures. The project covered the first-floor multi-purpose court, the third-floor main stadium, the table tennis room, the squash courts, the dance room, and the rhythmic gymnastics room, and was completed in November 2025. Once fully operational, the upgrades are expected to improve energy efficiency by more than 50% and reduce annual electricity consumption by over 1 million kWh, significantly lowering the Sports Center's overall energy use.



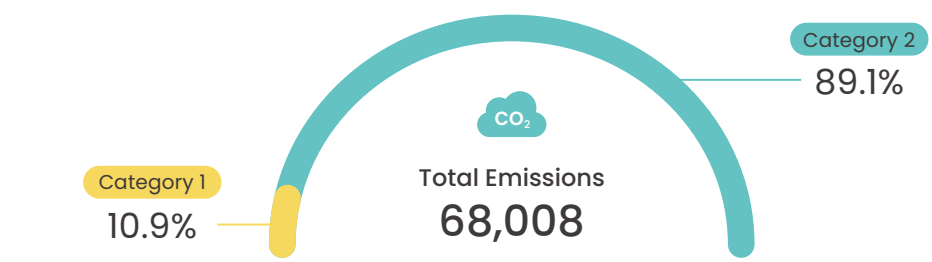
LED lighting upgrade at the 3F Main Stadium of the NTU Sports Center.

Practical Energy and Carbon Reduction Actions

Actions	Details
Replacing old air conditioners	From 2017 to 2025, a total of 5,166 air conditioners that were nine years or older were replaced with high-efficiency models, with an estimated 25% energy saving.
Switching to energy-efficient lights	- Indoor lighting: Since 2019, around 99,404 T5/T8 fluorescent lights have been replaced with LED lights, achieving an energy saving rate of over 40%. - Fire safety lighting: From 2011 to 2025, around 6,578 fire safety lights were replaced with LED lights, reducing energy consumption by 90%. - Outdoor lighting: All outdoor lighting in NTU's Main Campus has been replaced with LED lights since 2011. Since 2017, smart street lighting systems have been installed in phases, with 440 lights replaced to date. Smart street lights consume 67% less electricity than LED lights.
Improving heat pump performance	Water-to-water heat pump systems have been installed in the sports center and four dorms. The energy efficiency of these systems is examined and certified every year.
Monitoring electricity consumption	Electricity consumption patterns in each building are tracked monthly using digital meters. Abnormalities are addressed, and regular meetings are held to review consumption patterns. The energy efficiency of larger air conditioning systems, such as those in the Life Science Building, Main Library, and Second Activity Center, is continuously monitored to ensure energy-saving effectiveness.

In terms of greenhouse gas (GHG) inventory management, NTU began conducting GHG inventories as early as 2010 (covering 2009 emissions) and successfully passed external verification. In 2021, NTU conducted its 2020 GHG inventory in accordance with the ISO 14064-1:2018 standard and successfully passed external verification by the British Standards Institution (BSI), becoming the first higher education institution in Taiwan to complete a GHG inventory under the updated standard. NTU designated the 2020 inventory results as the baseline for its carbon neutrality goals and has tracked progress annually ever since. According to NTU's 2025 comprehensive organizational GHG inventory, nearly 90% of the university's GHG emissions stem from electricity consumption. In response, NTU will continue to improve energy efficiency and reduce unnecessary electricity use while conducting annual GHG inventories to monitor emissions and refine its carbon neutrality pathways and implementation strategies as needed.

2025 GHG Emissions ¹ Unit: tCO₂e



Emission category ²	Definition (ISO 140641-1:2018)	Emissions
Category 1	Direct GHG emissions and removals	7,433
Category 2	Indirect GHG emissions from imported energy ³	60,575
Total Emissions		68,008

Note 1 Inventory boundary includes nine areas, which are NTU's Main Campus, School of Professional Education & Continuing Studies, Downtown Campus, Experimental Farm, NTU Veterinary Hospital, Highland Experimental Farm, Experimental Forest, Zhubei Campus, and Yunlin Campus.

Note 2 Category 1 (direct GHG emissions) includes emissions from fuel consumption (ocean research vessels, official vehicles, boilers, emergency generators, and agricultural machinery), natural gas, liquefied petroleum gas (LPG), refrigerant leakage, septic tanks, and animal husbandry. Category 2 (indirect GHG emissions from imported energy) refers to indirect emissions resulting from purchased electricity.

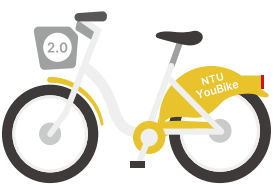
Note 3 Category 2 emissions were calculated using the 2025 industrial electricity emission factor (0.466 kgCO₂e/kWh), as published by the Energy Administration, Ministry of Economic Affairs.

II. Smart and Green Mobility

To reduce carbon emissions, NTU has gradually replaced its fossil-fuel-based university vehicles with electric cars and scooters and provided EasyCards for short-distance business travel. To promote low-pollution, energy-efficient green transportation, NTU has installed charging stations for EVs on campus. In 2020, NTU partnered with Tesla to launch Taiwan's first Tesla V3 Supercharger facility and introduced the Gogoro smart charging station and Kymco Ionex Battery Swapping Stations, establishing a comprehensive energy supply network for electric scooters and vehicles. Furthermore, through collaborations with Tesla, EVOASIS, and Fortune Electric, fast and slow EV chargers have been deployed across multiple campus parking lots. These initiatives have provided a total of 42 designated EV charging spaces, enhancing user convenience and accelerating the adoption of green transportation.

To promote the concept of shared mobility in smart transportation, NTU partnered with a car-sharing company to provide a 24-hour self-service car-sharing service at campus parking lots. NTU also collaborated with the Taipei City Government and YouBike to implement the "YouBike 2.0 Upgrade Project," establishing 136 YouBike 2.0 rental stations on campus and in surrounding areas. To encourage the use of public transportation, NTU launched a subsidy program in which students receive NT\$100 in stored-value credit when their YouBike 2.0 spending reaches NT\$500 or more, thereby increasing the adoption of public transportation. In August 2025, NTU became the first university in Taiwan to introduce low-carbon electric-assist micro-dispatch tricycles, enhancing the operational capacity of YouBike rebalancing on campus. Each micro-dispatch vehicle can transport up to seven YouBikes while complying with NTU's on-campus speed limit regulations. In 2025, a fleet of six electric-assist micro-dispatch vehicles was deployed to strengthen real-time YouBike rebalancing efficiency and provide more convenient public bicycle-sharing services.

Established on and around the Gongguan Campus



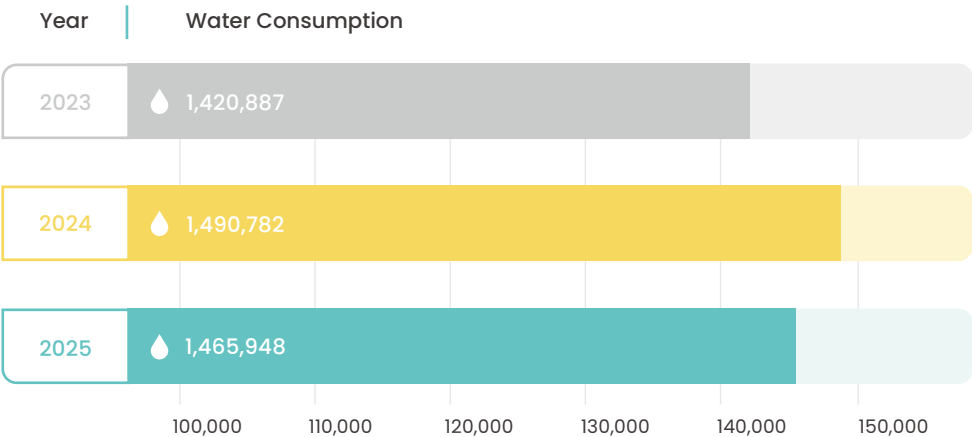
136 YouBike 2.0 rental stations
approximately **4,233** docking slots

III. Water Management & Recycling

Beginning in 2018, NTU gradually replaced traditional water meters with digital meters. In 2019, a digital monitoring system was installed to enhance the monitoring of water consumption on campus and minimize water wastage. Meter recordings are checked monthly, and regular campus patrols are conducted to detect and repair leaks. In 2025, a total of 148 water-saving improvement projects were completed in campus buildings and dormitories. In addition, NTU has implemented measures such as upgrading main water pipes, using water-saving equipment, and promoting water conservation to improve water usage.

Water Consumption in the Last Three Years¹

Unit: tons



Note 1: Statistics include NTU's Main Campus, Shuiyuan Campus, College of Public Health, College of Medicine (excluding NTUH), the old College of Social Sciences building, and Zhubei Campus.

Other Water Management Measures

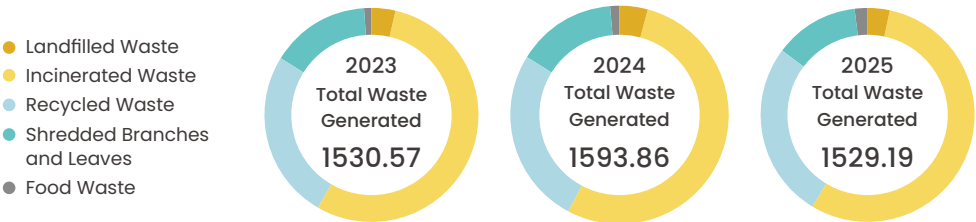
- Rooftop rainwater and swimming pool water are channeled into the Drunken Moon Lake.
- Water from lakes and raft foundations is channeled into the ecological pond for landscaping or used for irrigation at the farm.
- New buildings are equipped with rainwater collection systems that collect rainwater for toilet flushing and plant irrigation.
- Rain gardens are built along the road, where surface runoff is absorbed by soil, increasing water retention capacity.

IV. Waste Reduction & Recycling

NTU has long promoted waste reduction and recycling, implementing strict management of general waste, recyclables, and food waste, while enforcing garbage bags and the "Keep Trash off the Ground" policy. In 2025, NTU further strengthened waste reduction efforts by promoting the reduction of disposable tableware and bottled water use across campus and enhancing inspections at waste collection stations. Through the collective efforts of the university community, total waste generation in 2025 decreased by 64.67 metric tons compared with the previous year, representing a 4.06% reduction and demonstrating tangible progress in waste reduction. Moreover, to ensure proper management of laboratory waste, NTU has established "Regulations for the Storage, Disposal, and Handling of Laboratory Waste," which define waste classification standards and requirements for storage, clearance, and disposal. Laboratories must register and apply for waste removal through the "Laboratory Use and Management System," ensuring the proper management of hazardous industrial waste.

Waste Generation in the Last Three Years

Unit: tons



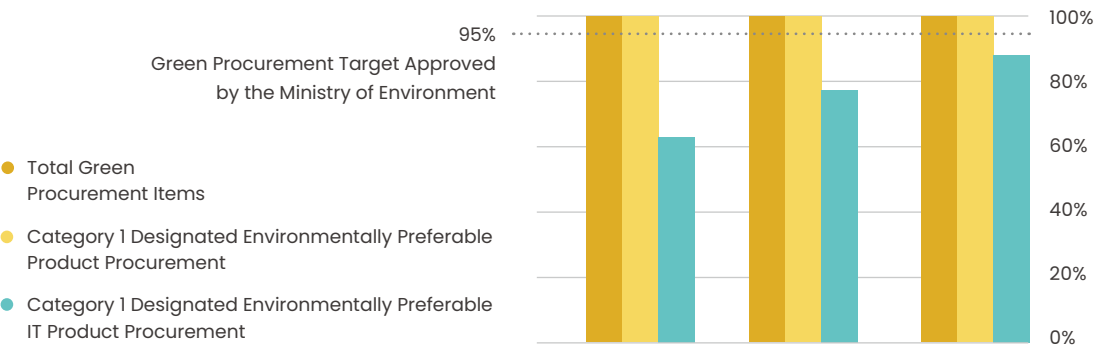
Waste Category	2023	2024	2025
Landfilled Waste ²	57.49	67.32	53.31
Incinerated Waste	839.00	856.93	844.45
Recycled Waste	389.17	413.87	408.21
Shredded Branches and Leaves	229.00	234.00	195.00
Food Waste	15.91	21.74	28.22
Total Waste Generated	1530.57	1593.86	1529.19

Note 2: As Taipei City no longer operates public landfill facilities, NTU's waste has primarily been incinerated. Large branches require shredding before incineration; when the Beitou Refuse Incineration Plant's shredder is unavailable, they are sent to Shanshuilu Eco Park (formerly Shanzhukeng Landfill), resulting in occasional small amounts of landfilled waste.

V. Sustainable Procurement

In compliance with the “Government Agency Green Procurement Plan” and relevant assessment guidelines, NTU has put in place a sustainable procurement policy and continues to encourage all departments and offices to prioritize the use of recyclable, low-pollution, and resource-efficient products. NTU also encourages the procurement of eco-friendly products certified with Green Mark. The Office of General Affairs set up the “Green Procurement” section on its website, listing relevant regulations and reference materials to assist departments in implementing sustainable procurement practices. In the past three years, NTU has consistently surpassed the green procurement targets approved by the Ministry of Environment, achieving remarkable performance.

Sustainable Procurement Ratio¹



Year	2023	2024	2025
Green Procurement Target Approved by the Ministry of Environment	95%	95%	95%
Total Green Procurement Items ²	100%	100%	100%
Category 1 Designated Environmentally Preferable Product Procurement ³	100%	100%	100%
Category 1 Designated Environmentally Preferable IT Product Procurement ⁴	64.11%	79.67%	88.41%

Launching the Campus Shared Umbrella Network

To promote the concept of circular economy, NTU introduced an Umbrella-Sharing Service in 2025, establishing 41 rental stations across campus. Through a flexible model that allows users to borrow umbrellas at one station and return them at another, the service connects campus facilities with nearby stores and MRT stations, attracting nearly 1,000 new users and recording more than 3,000 rentals in the second half of 2025. As the first university in Taiwan to introduce a shared umbrella system on campus, this collaborative initiative was selected as a highlight case of the Ministry of Environment’s 2025 “Net-Zero Green Living Alliance” initiative.

A shared umbrella rental station was installed in front of student dormitories to provide convenient access for residents.



Note 1 Statistics of procurements made by all campuses in the name of "NTU".

Note 2 (Procurement amount of designated eco-friendly products + Procurement amount of green products) / (Total procurement amount of designated items + Procurement amount of green products).

Note 3 Procurement amount of designated products with Green Mark / Total procurement amount of designated items.

Note 4 Procurement amount of designated IT products with Green Mark / Total procurement amount of designated items.

VI. Sustainable Dining

In alignment with governmental policies on food safety and waste reduction, NTU implements a pricing policy for disposable tableware to reduce consumption, encouraging the use of reusable alternatives and circular waste reduction in daily life. The Dining Services Committee oversees campus restaurants and stores to ensure safe and hygienic dining options for faculty, staff, and students. To promote sustainable dining, the Committee added "Sustainable Dining" as an evaluation category in its annual online poll for outstanding campus vendors, encouraging vendors to use ingredients with eco-friendly, animal welfare, and organic certifications while promoting sustainable dining practices among the campus community. Furthermore, NTU's College of Bioresources and Agriculture leverages its expertise and farm resources to organize educational activities and farmers' markets, advancing sustainable agriculture and food culture through environmental and agricultural education.

Key NTU Sustainable Dining Initiatives

Theme	Activity/Plan	Description
Food safety	<u>MOE Campus Food Ingredients Registration Platform</u>	Assists campus dining vendors in implementing food ingredient registration in compliance with MOE regulations, enhancing food transparency and strengthening campus food risk management.
	Regular food inspections	Conducts semester-based food safety inspections at campus dining facilities, with accredited laboratories performing microbiological and chemical tests. Non-compliant items are subject to retesting, removal, and corrective actions.
	Food safety and sanitation management	Holds semester-based meetings and training programs for management units and dining vendors to promote government policies, sanitation requirements, and campus food safety.
Reducing food waste & promoting sustainable dining	Guidelines for Minimizing the Use of Disposable Utensils and Packaged Bottled Water	In accordance with net-zero regulations, NTU eliminates disposable dining supplies at meetings and events, while campus restaurants adopt pricing policies to reduce disposable tableware use.
	<u>Sustainable food ingredients</u>	Establishes a sustainable ingredients webpage and incorporates the use of certified ingredients as a vendor evaluation criterion, encouraging the adoption of eco-friendly, animal welfare, and organic certified products.
	<u>Halal Certified Restaurants Map</u>	Develops a Muslim-friendly restaurant map featuring dining options on and around campus to support an inclusive dining environment.
	"I Love Sugar-Free Drinks" Campaign to Reduce the Consumption of Sugar	Partners with dining vendors to launch the "I Love Sugar-Free Drinks" campaign, offering discounted sugar-free beverages and promoting a healthier campus lifestyle.
Sustainable agriculture, livestock, and aquatic products	NTU Farm	NTU Experimental Farm operates two on-campus agricultural product centers, offering farm-produced agricultural and livestock products, as well as quality products from farmers' associations nationwide.

Nudging Plant-Based Choices through System Optimization

To promote sustainable dining on campus, the NTU Office of Sustainability collaborated with the NTU Secretariat and the Computer and Information Networking Center. In July 2025, NTU adjusted the default dining option in the "NTU Activity Registration System" to "Vegetarian," enhancing the visibility and selection of plant-based meals. Post-implementation data showed increases in both the number and proportion of users selecting vegetarian meals, indicating that default settings can have a meaningful impact on dietary choices. In addition, the Office of Sustainability collaborated with the Office of General Affairs and the Office of Student Affairs to survey the availability of plant-based meals across campus restaurants. The findings were provided to the Animal Rights Club to support its promotion of plant-based diet initiatives and related administrative coordination.

Step 3: 填寫報名資料

職稱

服務機關

聯絡電話

電子郵件信箱

example@domain.com

* 用餐狀況

☒ 素食 (植物性餐食)

☐ 葷食

☐ 不須提供餐點

* 不提供免洗筷與塑膠袋

☐ 了解

備註

Increasing the visibility of plant-based meals by setting "Vegetarian" as the default meal option in the NTU Activity Registration System.

VII. Biodiversity

NTU has been conducting regular biodiversity surveys on campus since 2009, covering various species, including birds, mammals, reptiles, insects, and plants, as well as assessing green coverage. These surveys aim to understand species distribution across campus and monitor changes in native and non-native species, providing valuable data for biodiversity management. Through these efforts, NTU implements diverse ecological management measures, including habitat conservation and resource management, to support biodiversity conservation and maintain a balanced campus environment.

Preventing Bird-Window Collisions

Since 2023, the Office of General Affairs has collaborated with students advocating for bird collision prevention. Following recommended spacing (≤ 5 cm vertically, ≤ 10 cm horizontally), patterns have been applied to windows in order to disrupt reflections and reduce bird strikes. Subsidies have been provided to encourage the adoption of this measure; to date, 15 buildings have partially completed improvements, significantly reducing collision incidents.

Bird collision prevention decals at the entrance of the Boya Lecture Building.



Campus Biodiversity Conservation Practices

Lychee giant stink bug management

NTU utilizes *Anastatus bifasciatus* for the biological control of *Tessaratoma papillosa* (lychee stink bug), substituting chemical pesticides to mitigate pest damage. This method has yielded successful results, significantly reducing the population of lychee stink bugs on campus.

Azalea maintenance

In recent years, climate change has posed challenges to azalea growth and blooming due to summer heat and droughts, as well as insufficient winter chill. However, through the dedicated maintenance efforts of the Office of General Affairs and the Department of Horticulture and Landscape Architecture, azaleas across campus continue to bloom successfully.

Campus Tree Health Management Plan

Using environmentally friendly techniques such as Visual Tree Assessment (VTA), stress wave detection, and beneficial microbial watering, NTU conducts integrated monitoring and management of campus trees to enhance the stability and diversity of the campus ecosystem while ensuring public safety.

Improving Water Quality at Drunken Moon Lake

A professor from the Department of Bioenvironmental Systems Engineering was commissioned to manage the water quality of Drunken Moon Lake. Physical aeration and biological control methods were used to increase dissolved oxygen, achieving an overall improvement of over 70% in water clarity, while maintaining stable water quality.



Outdoor campus tree inspection with guidance on pruning issues and proper management practices.



Water quality testing was conducted in the Drunken Moon Lake

3.3 Diversity, Well-being, and Campus Support

I. A Diverse and Inclusive Campus

(I) Diversified Recruitment & Student Counseling

NTU launched the “Hope Admission Program”, which includes two admission pathways: “Early Admission without GSAT – Hope Group” and “Individual Application – Hope Group,” specifically for students from financially and culturally disadvantaged backgrounds. In addition to students from low-income and mid-low-income families, families in hardship, and indigenous families, NTU began admitting more students from MOE-approved remote areas and “non-mountain non-urban” areas in the 2021-22 academic year. The goal of this “NTU without Borders” initiative is to extend NTU’s educational resources to more students in rural areas.

In addition to offering multiple admission pathways, NTU also provides “Hope Stipends” and “Hope Scholarships” and is committed to implementing the “Dream Field Comprehensive Support Program.” The program’s key feature is its diversified counseling and financial aid mechanisms, which include living allowances and meal support, international exchange opportunities, and domestic and overseas internships. Through learning incentives and scholarships, the program helps reduce students’ financial burdens during their university years and promotes equal access to educational opportunities.

2025 Dream Field Comprehensive Support Program

- 💰 Funding reached NT\$16.38 million
- ✅ Approved 2,864 cases
- 👤 Benefiting 525 students

Promoting Ethnic Equality: NTU Forum Advances Diversity and Cultural Inclusion in Higher Education

In July 2025, the NTU Indigenous Student Resource Center (ISRC) hosted the Ethnic Equity in Higher Education Forum, convening a total of 108 participants, including scholars, administrators, students, and civic groups. The forum explored how higher education institutions can respond to ethnic equality and multicultural issues. The forum focused on campus discrimination, domestic and international campus experiences, examining universities’ responsibilities under national Indigenous education policies, while sharing practical cases of cultural security and student support systems. Participants noted that higher education institutions can foster culturally inclusive campus environments through institutional design and educational initiatives. The forum facilitated dialogue within and outside NTU, serving as a key initiative in advancing NTU’s efforts to build a culturally inclusive and secure campus.



Panel discussion on “Current Practices and Future Prospects for Ethnic Equity.”

Initiative	Beneficiary	Support Offered
<u>Indigenous Students Resource Center</u>	Indigenous students	With the core mission of building a “cultural support system” and a “culturally inclusive environment,” the Center actively integrates internal and external resources while developing diverse learning processes. Through identity exploration initiatives, cultural practice grants, and dedicated counseling support, students are guided to deepen their ethnic identity and cultivate a sense of psychological belonging, ensuring that Indigenous students receive appropriate development opportunities and identity support. At the institutional level, the “NTU Indigenous Peoples and Ethnic Equality Task Force” focuses on enhancing cultural sensitivity among faculty and staff, improving counseling and grievance mechanisms, and reconfiguring campus spaces from Indigenous historical perspectives. By shifting ethnic issues from individual case support to systematic institutional optimization, NTU aims to advance Indigenous education for all.
<u>Disability Support Services, Student Counseling Center</u>	Students with disabilities	The Center offers individualized guidance for special education students, helping students reach their full potential and complete their studies. Services include special education assessment, loan of assistive technology, improvement of barrier-free environment, adaptation counseling, activities for empowerment, career counseling, and scholarships funded by the Higher Education Sprout Project, among others. In addition, the Center provides support for students with special education needs in preparing for study abroad programs, as well as specialized support and services for international students with special educational needs.
<u>Scholarships and grants from NTU and private sources</u>	Eligibility varies between types of grants	Financial support initiatives, scholarships, and grants are available for eligible students, including more than 250 privately funded opportunities. In 2024 and 2025, NTU-funded and donor-supported scholarships and grants exceeded NT\$430 million, benefiting approximately 16,000 students annually.

(II) Committees, Campus Planning, and Grievance Mechanisms Facilitating Campus Diversity and Equality

To promote diversity and inclusiveness on campus, NTU has established relevant committees and grievance mechanisms. Additionally, various administrative units have formulated and implemented programs that support a friendly campus environment.

1. Committees on Diversity and Equality

Committee	Description
<u>Gender Equality Education Committee</u>	Dedicated to promoting gender equality education on campus to create a friendly and inclusive environment.
<u>Special Education Implementation Committee</u>	Integrates resources, develops special education strategies, and improves the infrastructure and design of barrier-free environments to meet the needs of special education students and enhance special education at NTU.
<u>Advisory Committee, Indigenous Students Resource Center</u>	Provide support for Indigenous students in their daily lives and foster a campus environment that respects diverse cultures. The Advisory Committee meets each semester, providing diverse advice and evaluations on the Center's operations and development to facilitate the promotion of Indigenous culture and Indigenous education for all within the university.
<u>Campus Planning Office Committee</u>	Formulates friendly campus planning guidelines to promote campus diversity, anti-discrimination, and assistance for the underprivileged. Measures include human-oriented traffic/sidewalks/public bicycles, barrier-free spaces and facilities, gender-friendly spaces, campus signpost system, and a foreigner-friendly environment.

2. Campus Planning and Initiatives for Diversity and Equity

Plan & Measure	Details
<u>Barrier-free Facilities</u>	From 2024 to 2025, NTU improved accessible restrooms at various locations, including the Main Library B1 and the Basic Medical Sciences Building, among others. Elevators were upgraded in the College of Engineering Building and other campus buildings, while the installation of accessible elevators in the Core Subjects Classroom Building further enhanced campus accessibility for individuals with mobility needs.
<u>Map of Barrier-free Facilities</u>	The map displays information on barrier-free ramps and entrances, restrooms, elevators, and designated parking spaces for cars and scooters, supplemented with photos and text descriptions. This helps individuals with mobility impairments learn about the location and condition of facilities in advance. The barrier-free map is continuously updated with new photos and descriptions and includes an error reporting mechanism to ensure the information provided remains accurate, comprehensive, and up to date.
<u>Gender-friendly restrooms</u>	NTU established the "NTU Regulations for the Establishment of Gender-Friendly Restrooms." The regulations require all new buildings to provide gender-friendly restrooms, while existing buildings are prioritized for restroom improvements according to their individual conditions. As of December 2025, 26 buildings on campus have completed the installation of gender-friendly restrooms, with 10 under construction and five in the planning and design phase, totaling 41 buildings. Maps and photos of gender-friendly restrooms are also available online to help users locate these facilities.
<u>Employment Plan for People with Disabilities</u>	To protect the rights and interests of people with disabilities and provide employment opportunities for NTU students and alumni with disabilities, NTU introduced the "Directives Governing the Hiring of Employees with Disabilities" in October 2024. The directives strengthen measures related to recruitment, workplace conditions, and support systems. This plan aims to help individuals with disabilities find suitable jobs within NTU, aligning with the principles of equality, inclusion, and reasonable accommodation outlined in the Convention on the Rights of Persons with Disabilities (CRPD). As of the end of 2025, the number of individuals with disabilities employed by NTU reached 364, the highest on record.

3. Grievance Mechanisms Related to Diversity and Equality

Mechanism/ System	Description			
NTU Suggestion System	A two-way communication platform that welcomes faculty, staff, students, and alumni to provide constructive suggestions on university development, administrative operations, and other public issues. Through systematic collaboration among departments and units, the system aims to create an excellent and friendly learning environment at NTU.			
	Number of Suggestions	2023	2024	2025
		374	300	272
NTU Sexual Harassment Grievance Committee	Established to prevent sexual harassment, protect the rights of victims, and handle complaints related to sexual harassment cases.			
	Number of Complaints	2023	2024	2025
		15	7	9
NTU Faculty Grievance Committee	Pursuant to Article 7 of the "NTU Organizational and Review Directions for the Faculty Appeal Committee", full-time and adjunct faculty members may file an appeal if they consider NTU's decisions or measures to be unlawful or improper and to have infringed their rights and interests.			
	Number of Complaints	2023	2024	2025
		3	5	9
NTU Staff Grievance Committee	Pursuant to Article 2 of the "NTU Regulations for Staff Member Grievances", NTU staff members may file an appeal to NTU if they believe that management measures or the working conditions imposed by NTU are inappropriate and damage their rights and interests.			
	Number of Complaints	2023	2024	2025
		1	0	3

(III) Faculty and Student Composition

Number of Full-time and Part-time Faculty in 2025

Position	Full-time			Part-time		
	Male	Female	Total	Male	Female	Total
Professor	877	317	1,194	796	167	963
Associate Professor	326	214	540	295	122	417
Assistant Professor	225	117	342	390	151	541
Lecturer	15	7	22	341	211	552
Total	1,443	655	2,098	1,822	651	2,473

Note 1 : In 2025, there were a total of 160 full-time international faculty members and 266 adjunct international faculty members. Data as of December 31, 2025.

Number of Students in 2025

Academic	Male	Female	Total
Undergraduate	9,790	7,778	17,568
Master's	7,983	5,494	13,477
Doctoral	2,569	1,321	3,890
Total	20,342	14,593	34,935

Note 2 : Data as of October 15, 2025.

Student Diversity in 2025

Category	International Students	Children of Diplomats	International Science Fair Participants	Special Education (Including Students with Disabilities)	Athletic Excellence Admissions
Undergraduate	583	50	30	199	35
Master's	600	0	0	32	0
Doctoral	373	0	0	19	0
Total	1,556	50	30	250	35
%	4.45%	0.14%	0.09%	0.72%	0.10%

Category	Students from Outlying Islands	Indigenous Students	Students from 4-Year Technical and 2-Year Junior Colleges	Overseas Chinese Students (Including Hong Kong and Macao)	Students from Mainland China
Undergraduate	114	278	10	1,337	0
Master's	0	51	0	325	174
Doctoral	0	20	0	85	117
Total	114	349	10	1,747	291
%	0.33%	1.00%	0.03%	5.00%	0.83%

II. Campus Health and Well-being

(I) Remuneration and Benefits for Faculty and Staff

The remuneration of NTU faculty members is governed by the “Teacher Remuneration Act,” “Civil Service Pay Act,” and “Regulations Governing the Payment of Remuneration to Military, Public and Teaching Personnel.” Remuneration for contract staff is governed by the “Contract Staff Management Guidelines” and the “Remuneration Criteria for Contract Staff.” The current salary standard for all full-time and part-time faculty and staff members is higher than the minimum wage (NT\$28,590 in 2025). NTU continuously adjusts salary levels in line with revisions by the Ministry of Labor to ensure the rights and interests of all employees. For more details on remuneration and benefits for faculty and staff, please visit the [NTU Personnel Department website](#).

To actively recruit and retain top teaching and research talent, NTU has expanded faculty housing and established awards such as the NTU Eminence Chair Professorship and the Distinguished Professorship of Practical Contribution in 2019. NTU also encourages new faculty and researchers to apply for the Yushan (Young) Scholar Program. From 2021 to 2025, 72 scholars received additional pay from the Program. Moreover, NTU provides startup funds for new and early-career faculty. In 2023, over 40% of faculty and researchers received additional bonuses. Furthermore, to encourage administrative staff to generate income for the university, over 50% of administrative staff (full-time and contract workers) received bonuses or additional salaries in 2025.

(II) Health and Wellness Services for Faculty, Staff, and Students

In 2021, NTU launched the “NTU Faculty and Staff Holistic Care Service,” initiating cross-unit collaboration to promote the holistic well-being of its employees and create a happy campus. For physical healthcare, “the Good Liver Foundation Health Screening Program” introduced CT and MRI services in 2025. The NTU Cancer Center continues to provide a “Lung Care-Low Dose CT Program” benefiting nearly 1,000 faculty and staff members. For mental health, diverse counseling channels are available (including in-person, telephone, and online), with psychologists providing consultation services. Each individual is entitled to four free counseling sessions, and over 670 individuals received these services. In 2025, a total of 79 on-site and online activities, including fitness classes, cultural events, and two-day excursions were organized, attracting over 7,044 participants and achieving an average satisfaction rate of 97%, thereby comprehensively promoting the physical and mental well-being of faculty and staff.

In 2025, the “NTU Faculty and Staff Holistic Care Service”



organized **79** in-person and online activities, with over **7,044** participants.



Professional coaches lead faculty and staff in aerobic and strength training, comprehensively enhancing physical fitness.

A handmade scented soap workshop was held on Christmas Eve, allowing participants to relieve stress and relax in a soothing aromatic atmosphere.

To strengthen the student support network, NTU has established the Health Center, the Student Counseling Center, and the Center for Student Well-being, providing health care and services. Professional counseling staff are also stationed in each college, serving as consultants for students adapting to campus life, providing support, referring students to various resources within the university, and assisting all students in their healthy development. In terms of learning support, the Academic Advising Office was established in 2021. NTU has actively drawn on international models of academic advising to help students effectively utilize resources and build competencies for the future. In 2024, a “group facilitation” model was introduced, expanding outreach to diverse student groups through thematic workshops and lectures. In 2025, NTU further developed “growth cycle micro-courses,” guiding students from self-awareness to concrete action and forming scalable course modules. In 2025, a total of 1,047 academic advising sessions were conducted, providing students with more in-depth learning support.



From 2024 to 2025, the NTU Health Center collaborated with the Taipei Blood Center to hold 47 campus blood donation events, with a total of 2,621 participants, including 634 first-time donors.

(III) Workplace Health and Safety

In the spirit of preserving lives, the NTU Environmental Protection & Occupational Safety & Health Center ensures Environmental Health and Safety (EHS) compliance and training to safeguard the campus environment and community health. In 2025, the Center organized 61 training sessions on laboratory safety and hygiene, with a total of 8,507 participants. To further enhance campus safety, NTU has established a Campus Security team and the Student Safety Center, responsible for handling student accidents, promoting safety education, and conducting various guidance and prevention efforts.

Statistics of Incidents & Crisis

No. of occurrences

Year	2023	2024	2025
Campus incidents and crisis ¹	19	13	26

Note 1 : Statistics of faculty, staff, and students.



NTU's campus is equipped with 55 automated external defibrillators (AEDs) for emergency use.





Social Impact

- SDG 1 No Poverty
- SDG 2 Zero Hunger
- SDG 3 Good Health and Well-Being
- SDG 4 Quality Education
- SDG 5 Gender Equality
- SDG 6 Clean Water and Sanitation
- SDG 7 Affordable and Clean Energy
- SDG 8 Decent Work and Economic Growth
- SDG 9 Industry, Innovation and Infrastructure
- SDG 10 Reduced Inequalities
- SDG 11 Sustainable Cities and Communities
- SDG 12 Responsible Consumption and Production
- SDG 13 Climate Action
- SDG 14 Life Below Water
- SDG 15 Life on Land
- SDG 16 Peace, Justice and Strong Institutions
- SDG 17 Partnerships for the Goals





No Poverty

The Impact of Putative Income Regulations on Social Assistance

1 10 17

Dr. Julia Shu-Huah Wang, Associate Professor in the Department of Social Work at NTU, has been supported by the National Science and Technology Council's International Outstanding Young Scholar Scheme since 2022. Her research focuses on welfare systems in Taiwan, East Asia, and globally, with particular attention to promoting employment and economic self-reliance among social assistance recipients. Professor Wang initiated an international research team comprising collaborators from more than 30 countries to collect policy data and examine the progress and challenges of poverty reduction through social welfare policies. One of the team's studies, "The Impact of Putative Income Regulations on Social Assistance: A Policy Simulation Study Using a Model Family Approach and Administrative Data," provides important empirical evidence for reforming Taiwan's social assistance system through international comparison.

Taiwan's social assistance system applies a "putative income" regulation that assigns hypothetical earnings to applicants without proof of income, preventing some financially disadvantaged households from qualifying for low-income assistance. Focusing on benefit generosity, poverty reduction, and program coverage, this study used model family data and government administrative data to simulate the impact of abolishing the regulation and to compare Taiwan's system with those of other countries. The findings indicate that removing the putative income regulation would improve the economic situation of households without earnings by providing only basic living support, rather than creating an overly generous welfare system. The reform would only have a limited impact on overall social

assistance coverage and would not substantially increase fiscal burdens. International comparisons further suggest that abolishing the regulation would not make Taiwan a high-benefit welfare state. Instead, aligning income assessments more closely with households' actual financial conditions would enhance the fairness of the social assistance system and strengthen support for economically disadvantaged families.



The Global Welfare Research project brings together an international research team of interdisciplinary scholars from over 20 countries.



During the financial education activity, students eagerly raised their hands and engaged actively with the instructor.

See P.36 for details.

Empowerment to Renewal: A Lecture on Empowering the Homeless

The Student Housing Service Division of the Office of Student Affairs has been responsible for the 2025 Ministry of Education Social and Emotional Learning (SEL) project. By using dormitories as spaces for living and learning, the project aims to deepen students' understanding of empathy, acceptance, and care, and to encourage them to take concrete action. For the first time, the Women 1st Dorm partnered with the student club, NTU Labor Club, to invite writer Li-Ching Lin to deliver a lecture titled "Making Honest Money!" at the Freshman Women's Dorm Learning Center. Lin shared his experience of founding "Yo-Wash Association" in Wanhua, a social enterprise that trains homeless individuals in cleaning work. Through an innovative vocational training model, the association helps the homeless rebuild their lives, gradually rediscover their life values, and achieve social recognition.

Drawing on years of experience as a construction supervisor and field researcher, Lin used nearly one hundred slides to vividly illustrate how the "Yo-Wash Association" mobilizes social resources through its diverse cleaning services. The Association serves temples, churches, and universities, and engages in voluntary service such as post-disaster recovery and estate cleanout, enabling participants to rebuild self-confidence and reconnect with society through work. Approximately 30 students from various departments attended the three-hour session, engaging in in-depth discussion. Their questions addressed organizational operations, psychological adjustment, and social advocacy, while prompting reflection on how their own disciplines might respond to social needs. The event deepened students' understanding of vulnerable populations and encouraged them to translate their learning into concrete social action.



Li-Ching Lin demonstrated how to leverage networks and empowerment outcomes for fundraising while wearing attire covered with sponsor logos.

From Financial Education to Community Caring: NTU EMBA Rural Service

The NTU EMBA Student Association has continuously promoted diverse learning and social engagement through cross-unit collaboration, bringing knowledge into real-life environments. In 2025, the EMBA Student Association partnered with the "NTU EMBA Financial Education Society" to extend its rural service work, visiting 6 elementary schools in Taitung and Green Island over 3 days in May. The program reached over 130 students, covering financial education and community outreach activities. Under the guidance of Professor Yao-Min Chiang of the Department of Finance, EMBA students independently planned and executed the program, combining financial literacy, daily scenarios, and interactive games to help children develop financial mindsets, risk awareness, and basic decision-making skills.

The curriculum used interactive activities, including decision making, budget planning, and fraud identification, building teamwork and communication skills. Through the EMBA Student Association's "Spotlight Project," the team provided material support for rural students' learning and daily needs. Local teachers affirmed the program's value in broadening perspectives and building practical skills. This initiative has reflected NTU's commitment to social responsibility beyond academics and, through sustained collaboration and on-site service, continues to provide support for rural communities.



Through engaging activity design, children developed an understanding of "needs and wants."



Zero Hunger

NTU Study Reveals the Crucial Role of Generalist Natural Predators in Rice Pest Protection

2 15

In agricultural ecosystems, the biocontrol value of generalist natural predators has long been debated because they feed on both pests and non-pests. To address this question, a research team from NTU Institute of Ecology and Evolutionary Biology (IEEB) conducted a three-year field study in paired organic and conventional rice farms in Miaoli, combining field surveys with stable isotope analysis. The team found that spiders, ladybeetles, and other generalists feed on diverse food during the early stages of crop growth, but that as rice enters its critical production stage, the proportion of pests in their diet rises sharply from about 20% to more than 90%, suggesting that generalists effectively become “pest specialists” during critical growth (late crop) stages. The findings were published internationally in the *Journal of Applied Ecology* and the study was selected as the cover story, providing important empirical support for the role of generalists in agriculture.

The analysis further indicated that this feeding pattern remains highly consistent across different years, climatic conditions, and farming practices (organic or conventional), highlighting the stability of pest control provided by generalists. The enhancement of their population density in fields could not only reduce reliance on chemical pesticides but also support the sustainable development of agricultural ecosystems.

Overcoming Dairy Industry Adversities: NTU Partners with Advantech for Smart Transformation

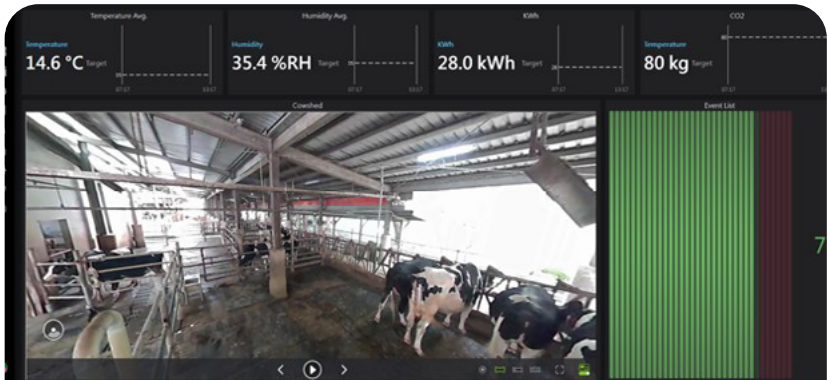
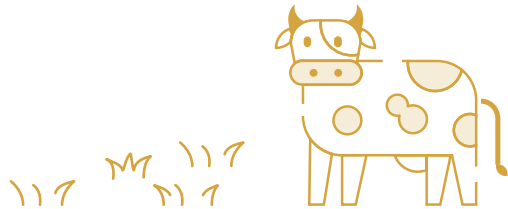
2 9 12

Taiwan’s domestic dairy industry faced severe challenges in disease prevention, rearing environments, and nutritional requirements due to shortages of feedstock and limited land. Precision dairy farming relies on the proper management of various conditions and the integration of relevant information throughout the production process. If the integration of smart monitoring and precision nutrition operations were successful, it would boost milk yield and quality while reducing environmental impact during production. However, the domestic market heavily depended on imported smart monitoring platforms. This created operational hurdles, ranging from high procurement costs and fragmented functionality to data integration issues. Furthermore, due to differences in climate and management practices, the baseline interpretation data used in foreign databases did not necessarily fit the domestic environment. Consequently, local farms were trapped in a dilemma of being “too costly, too complex, and too confusing,” which hindered the effectiveness of their equipment investments.



The team found Study reveals that common field-dwelling generalists such as spiders and ladybeetles are “pest specialists” during critical stages of crop growth.

Since 2025, the Department of Animal Science and Technology (AST) has partnered with Advantech, a leading company in IoT systems, to launch a data-integrated, visualization-enabled monitoring platform, which was successfully implemented at NTU's Experimental Farm. This platform collected data on environmental metrics, energy consumption, and cow behavior. Combined with 360-degree panoramic cameras, the system significantly reduced manual inspection time while enhancing monitoring efficiency. Furthermore, its data integration platform consolidated information spanning external weather forecasts, milking systems, health monitoring, and breeding records. The collaboration was based on local needs and thus established a smart management module tailored to the domestic context. This guided the dairy industry toward a data-driven and intelligent transformation.



360-degree panoramic cameras monitoring dairy cattle behavior for comprehensive data logging.

Replacing Plastic Film with Paper Mulch for Sustainable Agriculture

2 12

The NTU Agricultural Net-Zero Carbon Technology and Management Innovation Research Center (ANZC) partnered with the Taoyuan City Government to promote the application of eco-friendly paper mulch in agricultural production, aligning with global net-zero trends, sustainable farming, and stable food production goals. The research team is led by Associate Professor Chung-Yu Kuan and Professor Chun-Han Ko from the NTU School of Forestry and Resource Conservation. The team conducted field trials on cucurbit crops in Guanyin, Taoyuan, aiming to replace traditional plastic mulch in the cultivation of watermelon and oriental melon. The study showed that eco-friendly paper mulch matched traditional plastic films in crop yield and quality. Furthermore, it had superior air permeability and soil temperature regulation, enhancing crop growth stability, reinforcing food supply reliability, and demonstrating the feasibility of balancing agricultural productivity with environmental protection.

In terms of environmental benefits, the paper mulch is naturally biodegradable and requires no recycling, effectively reducing agricultural waste and the burden of subsequent waste collection. According to the field assessments, using paper mulch reduced carbon equivalent emissions by approximately 1,055 kg per hectare, highlighting its significant potential for decarbonization. Beyond the field trial, the NTU team provided on-site guidance and practical recommendations to farmers to enhance operational feasibility. Through this government-academia-farmer collaboration, the project facilitated the practical implementation of eco-friendly materials in farming, laying a solid foundation for future sustainable agriculture, stable food supplies, and low-carbon farming models.



The NTU research team discussing the application of eco-friendly paper mulch with a local farmer in the experimental farm.

Living in Peace: Co-efforts from Community and University on Senior Wellness

Using community health assessment models, the team studied each community's resources and needs. Next, the photovoice methodology was applied to present the communities' issues through photos, including a lack of space for walking, insufficient accessible facilities, and a carb-heavy diet. Finally, the team set measurable, interventional goals aligned with the SMART criteria. In Xitou Village, events such as rhythmic exercises, healthy dietary games, and medication disposal and consulting services were arranged to help the seniors with regarding chronic disease prevention and medication safety; in Shoude Village, the team promoted the "senior healthy diet" program by holding lectures on nutrition and providing senior cooking and dining programs in Minquan Community, a care model combining efforts from both technology and humans was built. The model introduced intelligent fall prevention devices, formed the report system, recruited mutual-aid teams, improved living environments, and conducted workshops on fall prevention.



A workshop on fall prevention in Minquan Community.

NTU Research Shows Early Colorectal Cancer Screening Helps Reduce Cancer Risk

3

With the rising trend of early-onset colorectal cancer, the research team led by Professor Han-Mo Chiu of the College of Medicine and Professor Tony Hsiu-Hsi Chen of the College of Public Health at NTU has recently proved that lowering the age from 50 to the 40-49 age group for starting the fecal immunochemical test (FIT) screening, can significantly reduce the colorectal cancer (CRC) mortality and incidence. The team tracked over 500,000 individuals from Keelung and Tainan for 17 years, finding that the early screening group exhibited lower CRC incidence and mortality rate than the regular screening group (incidence rate: 26.1 vs. 42.6 per 100,000 person-years; mortality rate: 3.2 vs. 7.4 per 100,000 person-years). After accounting for all relevant variables, the team found that early screening could reduce CRC incidence rate by 21-25% and CRC mortality rate by 34-39%. It was also noted that one CRC case could be prevented with 1,548 participants for early screening, compared with one case prevented with 2,079 participants for regular screening beginning at age 50.

The findings were published in the globally leading *JAMA Oncology* in June 2025. Positive feedback was an editorial by three Harvard Medical School experts, in which they pointed out that although randomized trials were lacking, the study's arguments were scientifically compelling and echoed the US Preventive Services Task Force (USPSTF)'s lowering of the recommended starting age for CRC screening from 50 to 45. Through community-based large-scale empirical studies, NTU Hospital has demonstrated Taiwan's international influence in public health policy and empirical medicine.



The press conference at NTU Hospital on the study's publication in *JAMA Oncology*.

NTU Promotes Care and Support for Multiple System Atrophy Patients

3 10

Multiple System Atrophy (MSA) is a rare and fatal neurodegenerative disorder that occurs in adulthood and typically affects people in their 50s. The disease progresses rapidly; in 5 years, patients who can walk normally will not be able to move without a walker or a wheelchair; in 6-10 years, patients will be bedridden and lose their lives due to complications. With a global prevalence of 3-5 per 100,000 people, MSA has been recognized as a rare disease in many countries, but it is not recognized in Taiwan, causing Taiwanese MSA patients to face numerous challenges in civil rights, medical care, and family support. Moreover, MSA is prone to misdiagnosis due to the lack of biomarkers and clear diagnostic criteria, leading to missed opportunities for early intervention and advance care planning. Furthermore, there has been no effective cure for slowing the progression of MSA, leaving the disease incurable.

Professor Wen-Sung Lai, from the Department of Psychology at NTU, and his team have devoted themselves to MSA research since 2017, connecting academic research, translational medicine, and patient advocacy. In 2024, the 3rd Taiwan Society for Neuroscience Meeting took place at NTU. During the event, the founding meeting of the Taiwan Multiple System Atrophy Patients Association, the first MSA patients' association in Taiwan, was held. With Professor Lai as the inaugural chairman, the association is dedicated to systematically fostering peer support and medical care for MSA patients, educating the public about MSA, and advocating for relevant policies. Apart from building a [website](#) that shares audiovisual resources to promote health education, the association co-created a platform for MSA care and health education with National Taiwan University Hospital, which won the hospital the "2025 Centers of Excellence" recognition from Mission MSA and served as a great step forward in Taiwan's rare disease care research.



"The Past and Future of Multiple System Atrophy" Seminar, held at the auditorium of the NTU Cancer Center, Nov. 2025.



Quality Education

NTU "Light Up the Road" Cards Help Students Plan Their Learning

4

On February 8th, 2025, NTU released the "Light Up the Road" Cards at the 2025 Taipei International Book Exhibition (TiBE 2025). As the first self-developed learning plan tool in Taiwan, it guides users in transforming abstract ideas into concrete action plans, helping users overcome struggles and explore their future capabilities. The guests attending the event included Hung-Jen Wang, NTU Vice President of Academic Affairs; Lin-Chi Chen, NTU Deputy Vice President for Academic Affairs; Chun-che Chang, Director of the National Taiwan University Press; and Kuei-Yuan Chan, Project Manager of the Cross-disciplinary Bachelor Program of the Ministry of Education. At the event, the NTU Academic Advising Office staff shared their thoughts on designing the tool; as students in the BANI (Brittle, Anxious, Nonlinear, and Incomprehensible) era are in desperate need of guidance to help them explore their learning objectives and build confidence to face the uncertain future, the innovative "Light Up the Road" Cards were designed to cater to their needs.

The tool is the fruit of thousands of meetings and multiple tests. The toolkit includes 6 categories of action cards and a "Light Up Map" with 7 stages of the coaching process that systematically guide users through the dialogue and transform their abstract ideas into concrete action plans. With its four highlights being reassuring guidance, inspirational exploration, precise focus, and actionable practices, the tool is designed for users to understand themselves or guide others through step-by-step, well-organized dialogue. Within six months of its release, about 100 sets of the tool have been used by higher education institutions and individual facilitation practitioners, and it has also been promoted to Niigata University, Japan, showing its high practicality and potential for promotion. This lays the foundation for NTU to promote the academic advice system and enhance students' cross-disciplinary exploration and self-development skills.



The release event of the "Light Up the Road" Cards at TiBE 2025.



A demonstration of how the "Light Up the Road" Cards can be used.

NTU Promotes Educational Equity for High School Students Across Regions

4 10 17

The NTU Tutor Team, guided by the belief that "students may not begin at the same starting point, but with support, they can reach the same finish line," is dedicated to bridging urban-rural disparities in educational resources. In 2025, the team expanded beyond regional boundaries with a hybrid tutoring model, benefiting 305 high school students, more than 65% of whom came from regions outside Taipei and New Taipei City. Among them, 40 students from economically disadvantaged, rural, or special needs backgrounds received intensive tutoring. The team also collaborated with the Education Department of the New Taipei City Government to connect NTU students with high school students in rural areas. Joining forces with the NTU Learning Optimization Club and drawing on ideas from the science of learning, the team helped students develop systematic study strategies and self-directed learning skills, ensuring that these educational resources have long-term benefits.

Apart from weekly general review lessons in preparation for the college entrance exams and online problem-solving tutorials, workshops on writing learning portfolios and mock interviews were also held. In addition, the team actively engaged in cross-field collaborations and arranged capacity building lectures to provide diverse educational insights. Students from NTU were also invited to share their academic experiences with high schoolers from New Taipei, Chiayi, and other areas. Through professional teaching, cross-field collaboration, and sincere support, the team aims to create a virtuous cycle in which more and more students gain the opportunity to pursue their education.



The NTU Tutor Team held the "Seniors Cafe" event for high schoolers to exchange ideas on future majors and further studies with NTU students.

Book Launch of *a'o ho'e ton'u letmahmusk'u.=Inak tu uskunan maduh.* with the Pasuntamul at Mahavun Elementary School

The NTU Experimental Forest has long been devoted to the research, cultivation, and promotion of Taiwan's native millet. In 2025, the NTU Experimental Forest published *a'o ho'e ton'u letmahmusk'u.=Inak tu uskunan maduh* (My Classmate Millet and Me) together with Mahavun Elementary School in Xinyi Township, Nantou County. The picture book was written and illustrated mainly by the sixth graders, with teachers assisting in illustration and editing. Written from the students' perspectives, the book documented their full experience of cultivating millet, serving not only as an exhibition of the Tsou's and Bunun's traditions and lifestyles but also as a demonstration of the result in practicing cultural learning. With the help of the teachers of Tsou and Bunun, the book was presented in both Mandarin and the students' mother tongues, making it an accessible reader of Indigenous culture and further highlighting the significance of cultural heritage.

The book launch was held on August 21st, 2025, together with the indigenous ceremony of Pasuntamul (Harvest Festival). The E.SUN Bank sent representatives to attend the event and donated 200 books to the E.SUN Libraries throughout Taiwan, promoting the story of millet to more schools and students. The book was selected in the 2nd "Selection and Reading of Books on Education for Sustainable Development" program, co-organized by the National Taiwan Library and the Fitipower Environmental Foundation, the only work selected that was co-published by a school and an institution. The book is expected to be included in the second volume of the *Sustainable Development Library and Information Reading Manual*, increasing the influence of sustainability and biodiversity education on children and youth.

我和我的小米同學



圖文 /
Banitui Qalavangan, Husung Takistalan
pasuya-luhacana, Ibu Qalavangan
Sani Takiscibanan, apu'u-luhacana
Aping Taisukan, paicu-teneoana,
majjeveljev demajjalat

a'o ho'e ton'u letmahmusk'u.=Inak tu uskunan maduh. (My Classmate Millet and Me), written and illustrated by Mahavun Elementary School students, 2025.



Gender Equality

Red and White Chefs: Menstrual Recipe Competition

3 4 5

NTU's general education course "Period: Theory, Thoughts and Actions" aims to integrate NTU academic learning with off-campus social engagement. Over the past eight semesters, the course has advanced innovative menstrual education, aiming to promote gender equality in everyday learning. On May 18, 2025, ahead of Menstrual Hygiene Day on May 28, NTU D-School collaborated with The Reporter for Kids to host the "Red and White Chefs: Menstrual Recipe Competition." The event brought together 6 intergenerational teams composed of university and elementary school students. A panel of 7 interdisciplinary judges evaluated the teams based on cooking techniques, sensory presentation, teamwork, and conceptual ideas. The competition highlighted how menstrual education can extend beyond the classroom and be integrated into daily life.

The cooking competition focused on menstrual-friendly practices, intergenerational cooperation, and dietary action. Each team was required to complete dishes of both a designated international cuisine and of an original menstruation-themed creative dish within one hour. The "Rising Star Award" was won by a team composed of students from Yonghe Elementary School, NTU, and NTNU. Their dish featured Indian dried fruit energy balls in the shape of a uterus, demonstrating both creativity and technical skill, with the elementary school students taking the lead in its execution. The competition was held in the kitchen of NTU's newly completed graduate student dormitory. Through diverse culinary approaches, participants highlighted how different cultures care for the body during menstruation, while encouraging students to practice care for themselves and others through everyday food choices.



Contestants cooked enthusiastically in the kitchen of the NTU graduate student dormitory.



Group photo of the cooking competition.

Driving Changes with Evidence: The Social Impact of Intimate Partner Violence Research

3 5

Intimate partner violence is not an isolated misfortune affecting only a minority; rather, it is a long-standing social issue that has often been overlooked. The research team, which consisted of Professors Kuan-Ming Chen, Ming-Jen Lin, and Shiau-Fang Chao from the NTU College of Social Sciences, together with Professor Chen-Hong Chang from the University of Toronto, analyzed reporting data collected between 2012 and 2018 from Taiwanese hospitals, police records, and helpline services. Combined with health, labor, and household registration records, for the first time, these data enabled researchers to trace the progression of intimate partner violence from its occurrence and escalation to reporting, while also examining how it gradually affected the life choices and living conditions of victims. The research found that most victims tended to endure abuse during the early stages of intimate partner violence, and for both men and women, the divorce rate increased significantly only after reporting occurred. In terms of employment, female victims experienced a decline in employment rates, indicating that violence not only inflicted physical harm but also eroded their economic autonomy. It was noteworthy that young women who reported and received institutional intervention could gradually re-enter the workforce, with positive effects sustained for several years.

Furthermore, the study showed that regardless of gender, victims demonstrated a decreased probability of having children after reporting the incident, indicating that violence had profound impacts on family planning. In terms of mental health, female victims showed a notable increase in depression-related outpatient visits, which peaked around the time of reporting. This reflected the immense pressure resulting from both the violence and the process of seeking help. The research demonstrated its academic significance through addressing the limitations caused by insufficient data and the difficulty of tracking long-term impacts, while its publication in the *Journal of Labor Economics* in 2025 further reflected its international influence. The research highlighted that understanding intimate partner violence through scientific evidence went beyond uncovering problems; moreover, it drove policy implementation and institutional optimization, helping victims rebuild their lives and restore their autonomy and dignity.

From Remote Areas to Girls' High Schools: NTU IM Practices Social Responsibility Through Information Technology Education

NTU's Department of Information Management (IM), with strong support from the IM Department Office, the Office of Student Affairs, and the E.SUN Cultural and Educational Foundation, has actively promoted its "Information Technology Education Service-Learning" initiative under the leadership of Professor Ling-Chieh Kung in recent years. Through programming camps, computational thinking and programming skills are promoted to elementary and junior high school students in remote areas. Centered on "Service, Learning, and Experience," this service-learning initiative encourages university students to step out of their comfort zones, cultivating social concern and the ability to give back through practical service, while engaging in self-reflection throughout the process. To date, the faculty and students have visited Yilan, Hsinchu, and Changhua, reaching hundreds of elementary and junior high students, with over a hundred students from IM and other departments involved in teaching and service.

Moreover, in response to gender equality and to cultivate more female talent in technology, NTU IM has collaborated with National Changhua Girls' Senior High School and Chia-Yi Girls' Senior High School since 2024. IM students provide remote mentoring to high school girls in self-directed learning of information technology, including C++ and Python programming, interactive website development, mobile application development, machine learning, and AI applications. Over the past year, approximately 50 students from girls' high schools have been mentored, encouraging more female students to enter the field of technology.



Programming camp students from Yilan's Shunan Junior High visited NTU.



Clean Water and Sanitation

An Innovative Circular Reuse Model for Pickled Mustard Wastewater

6 12 14

The pickled mustard production zone in Dapi Township, Yunlin County, has long been troubled by the treatment of high-salinity pickling wastewater (brine). Dr. Ming-Hsiu Chan and Ph.D. candidate Sheng-Wei Ho from the Hydrotech Research Institute at NTU collaborated with the Yunlin County Government to develop an innovative "bio-circular reuse" solution. Organic matter and nutrients extracted from the brine stimulate the growth of microalgae and macroalgae (such as *Gracilaria*). These algae can then be used as a natural feed source for bivalves, partially replacing fishmeal while improving water quality, thereby establishing a novel way to reuse waste. The research outcomes were published in 2026 in the *Journal of Aquaculture Nutrition*.

Furthermore, the team established a demonstration site where aquaculture practices and water quality monitoring are carried out, forming a scalable and transferable technological model. During the 2025–2026 project period, at least 600 tons of wastewater are expected to be treated and reused, reducing environmental impacts while enhancing aquaculture productivity and system stability. This demonstrates NTU's ability to integrate local practice and technological innovation, providing a concrete and transferable solution for agricultural waste management and aquaculture transformation.



Pickled wastewater is used to cultivate *Gracilaria*, which is a food source for abalone.



High-salinity pickled wastewater is generated during the pickling of mustard greens, which requires large amounts of salt.

Electrically Driven Green Separation Technologies: Transforming Resource Recovery from Fluoride- Containing Semiconductor Wastewater

6 9 12

In response to the environmental challenges of the semiconductor industry, Professor Chia-Hung Hou from the NTU Graduate Institute of Environmental Engineering partnered with ReTech Environmental Solutions to develop a groundbreaking Membrane Capacitive Deionization (MCDI) system. This electrochemical separation technology replaces traditional chemical precipitation, which often results in secondary chloride pollution and massive chemical sludge. Utilizing nano-activated carbon with high surface areas (1,500–2,000 m²), the system precisely captures fluoride ions from low-concentration wastewater and converts them into high-value Cryolite for industrial reuse.

In terms of application, the technology features low energy consumption and can be integrated with renewable energy sources to achieve carbon-free separation, reducing the carbon footprint associated with conventional sludge treatment processes. The team has also established the Net Zero WaterTech Hub at NTU's Zhubei Campus and collaborated with industry partners to set up joint laboratories, advancing technology validation, talent cultivation, and practical implementation while strengthening connections between academic research and industrial applications. The project was recognized with the NSTC Outstanding Industry-Academia Collaboration Award, highlighting the team's strengths in interdisciplinary integration and technology commercialization. It also provides the semiconductor industry with an innovative solution that combines waste reduction and resource circularity.

Prototype
of the MCDI
modular
system



2025 Net Zero Water Tech Hub

In June 2025, NTU Science and Technology Research Institute for DE-Carbonization, NTU Graduate Institute of Environmental Engineering, National Land Management Agency, Ministry of the Interior, and the Chinese Institute of Environmental Engineering co-organized the "2025 Net Zero Water Tech Hub." The conference gathered 13 speakers from Taiwan, the US, Australia, and South Korea, attracting more than 450 industry representatives, government officials, academics, and entrepreneurs in attendance. The sessions and roundtable focused on water sustainability, wastewater treatment, water use in high-tech industries, and the application of sustainable water technology.

Some of the most advanced research presented at the conference includes the use of membrane capacitive deionization (MCDI) and membrane aerated biofilm reactors (MABR) in processing wastewater and resource recovery, processing high-salinity wastewater, AI-powered water treatment, nutrient recycling, anti-scaling smart film, and other technologies. The use of reclaimed water in high-tech industries and in-factory water circulation was also introduced. Meanwhile, 12 enterprises were invited to showcase their water processing and recycling technologies at the Net Zero Water Tech Hub, demonstrating innovation and application in water technology while advancing international collaboration.



Affordable and Clean Energy

Creating a Net-Zero Energy Sustainable Ecosystem Through Science and Industrial Transformation

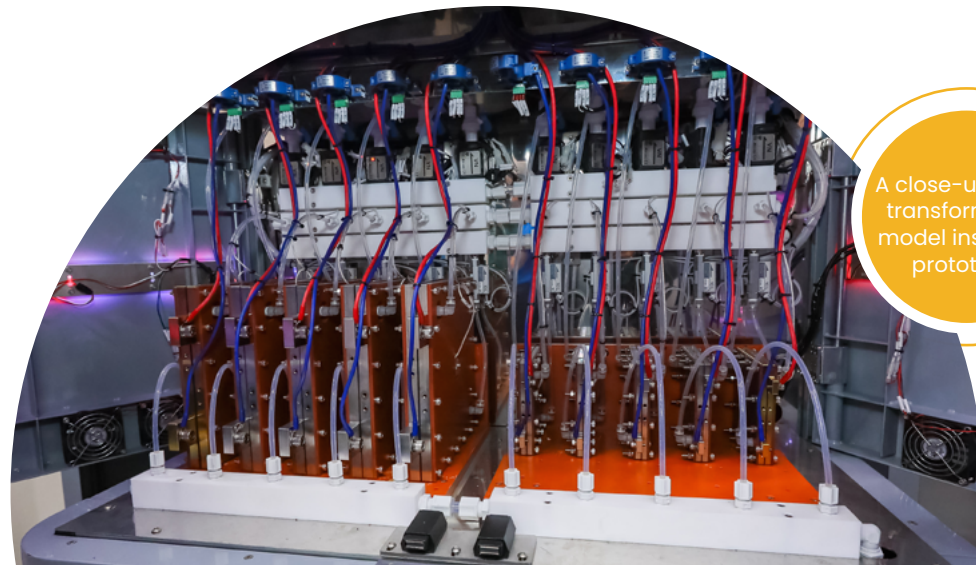
7 13

To combat climate change and achieve net-zero, nations around the world are actively facilitating energy transformation, with low-carbon hydrogen and carbon circulation being key. Among all solutions, electrocatalysis is seen as crucial to realizing green energy and circular economy, as it is the driving force behind water splitting and CO₂ electroreduction. Professor Hao-Ming Chen of the Department of Chemistry, NTU, has long devoted himself to the application of electrocatalysis and has integrated resources from chemistry, engineering, and synchrotron radiation research into an interdisciplinary platform. His team has developed a method to use operando spectroscopy to study how electrons and structures change in catalytic materials, which allows scientists to better analyze energy transformation.

Since 2019, Professor Chen and his team have collaborated with top institutions in Europe, Japan, and the US by facilitating international research and talent exchanges. In a 2025 paper published in the journal *Nature Sustainability*, the team proposed spin crossover as a new approach to enhancing catalytic efficiency, providing a new scientific foundation for energy conversion. As part of industry-academic collaboration, Professor Chen and his team worked with domestic energy and material companies to produce and test kilogram-scale hydrogen production prototypes and CO₂ electroreduction systems. Their endeavors show that NTU can greatly influence net-zero technology and energy transformation by assisting businesses in quantifying the benefits of introducing new technology and decarbonization.



Professor Hao Ming Chen and his team are demonstrating how their prototype works at a press conference.

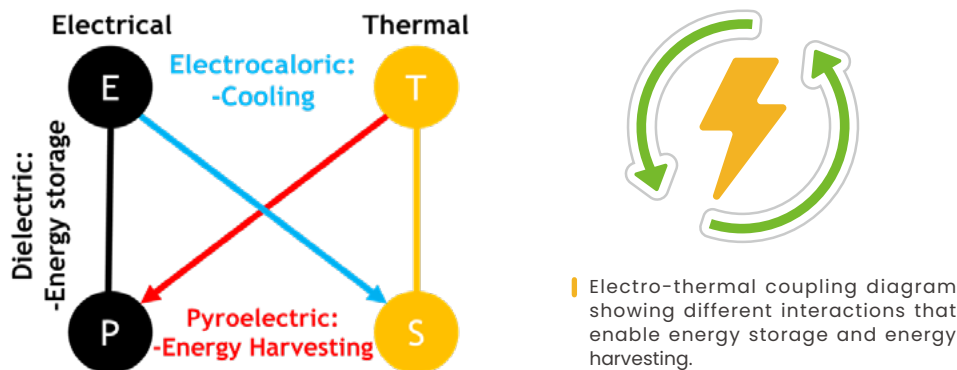


A close-up of the transformation model inside the prototype.

Pyroelectric Energy Recycle of Fluorite Hafnium Zirconium Oxide 7 12

As we enter the age of AI and High Performance Computing (HPC), precise utilization of energy has been central to sustainable technology. Of all the prospective materials, ferroelectric materials have become an industry darling for its high power and high energy density. For circuit breakers in hard drives, ferroelectric capacitors can maintain the voltage at the instant of a power outage, ensuring that immediate data retrieval to the memory. Since their crystal configurations change drastically when temperature rises, ferroelectric materials can be used to collect heat-induced electricity, thereby recycling the heat generated when semiconductors are operating. However, in order to recycle efficiently, the material within the nanoscale must be lead-free, have a high melting point, and can tolerate high pressure. These constraints pose serious challenges when applying technology on a miniature scale.

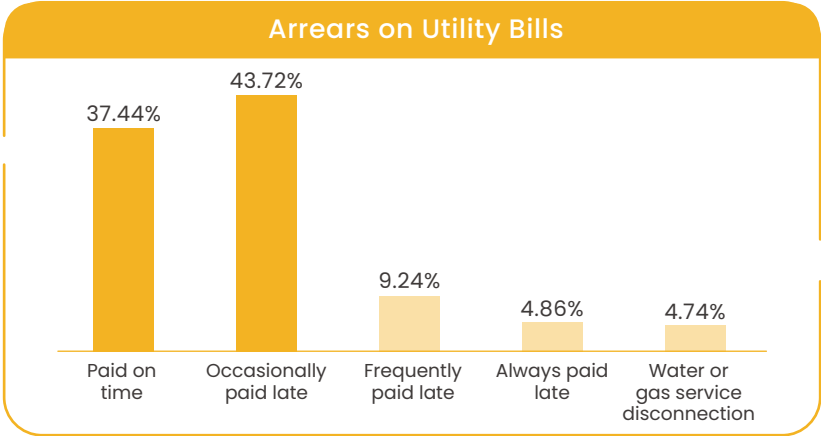
Professor Min-Hung Lee of the Graduate School of Advanced Technology, NTU, and his team have developed a material that can create reversible reactions between electricity and heat. Fluorite hafnium zirconium oxide can retrieve energy efficiently when the temperature changes drastically. In addition, it is capable of electrostatic storage and thermoelectricity, so with specific electric fields, the material may fully recover, thereby greatly increasing the lifespan and durability of parts made from fluorite hafnium zirconium oxide. Managing waste heat remains a key challenge in advanced semiconductor processes, including backside power delivery and 3D packaging. Electro-thermal coupling technology provided a strategic scientific basis for heat waste management, converting heat waste into energy, overcoming chip cooling bottlenecks, and opening new paths for energy saving.



The Taiwan Just Energy Survey: Advancing a Just Net-Zero Transition 7 10 13

The Risk Society and Policy Research Center, NTU co-conducted the first-ever "Taiwan Just Energy Survey" with World Vision Taiwan (WVT) and the Taiwanese Association for Development Studies, presenting the results on April 9th, 2025. The survey was conducted among families receiving assistance from WVT across Taiwan. The findings indicate that socioeconomically disadvantaged groups are more vulnerable to energy poverty in terms of energy access, spending, efficiency, and affordability. Limited income, insufficient subsidies, and the fact that nearly 60% of respondents live in rented housing further contribute to energy burdens, particularly during the summer electricity rates. Close to 20% of respondents have experienced water, power, or gas cuts as a result of late fees. More than 60% of respondents find the cost of air conditioning (almost) unaffordable. During the summer season, 56.9% of respondents see their energy bills totaling more than 10% of their income, and 30.49% of respondents see their energy bills totaling more than 20% of their income.

This survey shed light on how net-zero transition affects vulnerable groups. New tariff policies proposed by the American Trump administration may incur a global recession, which would place even more burden on vulnerable groups and exacerbate energy poverty. This survey calls on the government to draft and support policies supporting sustainability and fairness, including identifying energy vulnerable groups, clarifying the characteristics of these vulnerable structures, strategizing a fair allocation of energy resources, strengthening policy communication mechanisms, and establishing shock funds against climate and social changes.



Survey Results on Overdue Energy Utility Payments.



Decent Work and Economic Growth

NTU Industry-Academia Collaboration Platform Awarded Bronze

8 9

"Empowering Future Talent", helmed by the NTU Career Center (NTUCACE), has been awarded the bronze in the 2025 Brandon Hall Group HCM Excellence Awards' "Best Competencies and Skill Development Category." Widely known as the Oscars of Human Resources, the HCM Excellence Awards recognize the best in global human resources and talent cultivation, with the 2025 edition bringing together top companies and educational institutions around the world to compete in the same categories. NTUCACE's project stood out with its systematic approach, sustained project design, and replicable achievements. The project demonstrated innovative practices in career-oriented education, reflecting the competitiveness and influence of Taiwan's higher education system on talent cultivation.

"Empowering Future Talent" puts career exploration, cultivation, and development support at the core. By building an integrated platform for industry-academia collaboration, the project offers diverse courses, themed workshops, and cross-disciplinary collaborative training. It equips students with the skills to solve cross-disciplinary problems, communicate across cultures, and develop leadership capacities, helping bridge the gap between learning and professional practice while supporting a smooth transition into their careers. Through international collaboration and deepened industry-academia ties, NTUCACE has gathered learning resources from universities, businesses, and society, fostering a co-creating and co-learning ecosystem in talent cultivation. The goal is to advance sustainable talent development and create future talents with a global worldview and innovative capabilities.



Students develop cross-disciplinary and hands-on skills through lectures and workshops.

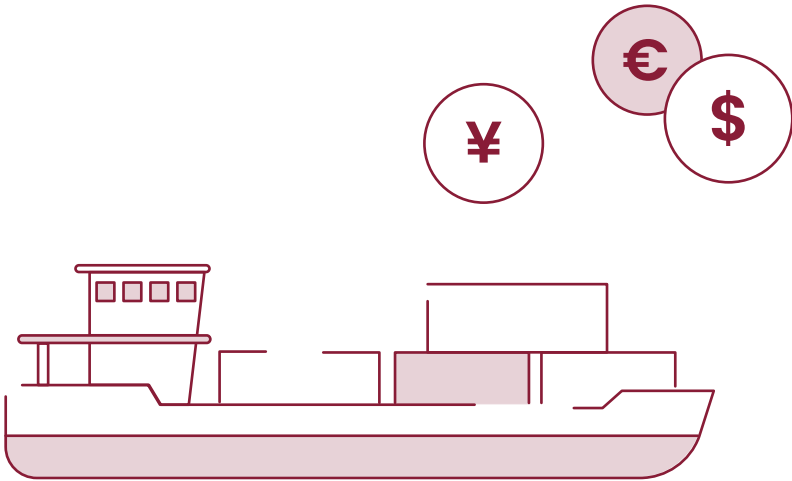
NTUCACE was
awarded bronze in
the category of Best
Competencies and
Skill Development



Misaligned Currencies and Economic Growth: The role of Global Value Chains

A research team led by Professor Shiu-Sheng Chen from the Department of Economics, NTU, published an article investigating the relationship between the real exchange rate and economic growth. Conventional wisdom dictated that a weaker currency (with an undervalued real exchange rate) would lead to an advantage in exports and accelerate economic growth. When the research team analyzed statistics covering 183 countries from 1990 to 2019, their findings confirmed that when countries undervalue their currencies, they experience higher performance of economic growth.

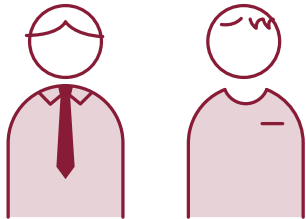
However, the study further discovered that the proportion of economic growth depends on the country's role in the international division of labor. As countries integrate themselves into the global value chain, businesses become dependent on importing raw materials and intermediate goods. Therefore, if a country undervalues its currency too much, exports may be cheaper, but the cost of imports would also increase, thereby weakening the country's overall edge. For countries deeply integrated into the global value chain, an undervalued real exchange rate translates to diminished returns, perhaps even hurting the economy. This study serves as a reminder to governments that when formulating exchange-rate policies, countries should consider their position in the global value chain instead of blindly pursuing maximum advantage in exports. It sheds light on the future of Taiwan's economic development.



Institutional Challenges in Taiwan's Policies on Foreign Professionals

Professor Yen-Fen Tseng from the Department of Sociology, NTU, has maintained a long academic interest in white-collar migrants working in Taiwan. Since 2010, Taiwan has sought to attract immigration of foreign professionals through diversified migration paths, along with a migration system that supports work, temporary residency, welfare, family, and long-term residency. However, Prof. Tseng's study found that discrepancies remain between the system's design and execution, and that foreign professionals receive more protection of rights than blue-collar migrant workers. She also observes that foreign professionals receive differential treatment based on their residency status; for instance, whether one holds permanent residency affects one's right to participate in employment insurance.

Prof. Tseng argues that while Taiwan has sought to increase immigration in recent years, its laws and regulations remain restrictive, and little effort is made to secure immigrants' rights and increase social acceptance. As Japan, South Korea, and other countries compete for migrants, having a friendly immigration system and full rights protection will stand out, as evidenced by how some migrants have chosen to work in Japan and South Korea instead of other East Asian countries. Prof. Tseng advises that Taiwan's immigration system should transition from a control-oriented to an acceptance-oriented approach, strengthen inclusivity throughout the system, and improve rights protection to attract international talents of all kinds.





Industry, Innovation and Infrastructure

AI-Powered Green Chemistry Diagnostic Advisor to Facilitate Sustainability Transitions

9 12

As net-zero initiatives become mainstream worldwide and chemical management regulations continue to tighten, SMEs face challenges integrating into global supply chains due to difficulties accessing regulations, inconsistent safety standards, and time-consuming alternative assessments. In collaboration with the Chemicals Administration, Ministry of Environment, Professor Yu-Feng Jane Tseng of the Department of Computer Science and Information Engineering at NTU led a team to develop the "AI-Powered Green Chemistry Diagnostic Advisor." Using AI agents to collect and organize global chemical regulations and scientific literature, the system provides compliance assessments, risk mitigation recommendations, and safer alternative suggestions. The platform reduces the time required for chemical compliance evaluation and alternative searches from approximately 35 person-hours to just 30 minutes. This enhances efficiency, reduces regulatory risks, and enables enterprises to make timely and informed R&D and export decisions.

The advisory system also serves as an important support tool for the government in optimizing chemical management policies. It helps industries transition from passive compliance to proactive prevention and safer material assessments, encouraging enterprises to adopt environmentally friendly production models. Through collaboration between universities and central authorities, the project strengthens industry-government-academia networks and demonstrates the role of higher education in sustainable governance and industrial transformation. The research process cultivated interdisciplinary talents with AI capabilities and sustainability perspectives, enabling students to understand the connection between technological innovation and public policy. In the 2025 Presidential Hackathon, the team was selected as one of the top five teams nationwide and received the "Outstanding Team Award," demonstrating how technological expertise can address societal needs and advance digital and green transformation.



Professor Yu-Feng Jane Tseng and her team with President Ching-Te Lai at the 2025 Presidential Hackathon.



See P.18 for details.

Taiwan-Europe Semiconductor Training Program Promotes International Talent Exchange

From June 29th to July 5th, 2025, the International College at NTU (NTUIC), in collaboration with the Ministry of Foreign Affairs and the Taiwan Semiconductor Research Institute (TSRI), co-organized the 2025 Taiwan-Europe Semiconductor Short-term Training Program, focusing on semiconductor design trends and technological transformations. Students from top universities in Poland, Italy, Slovakia, Romania, Lithuania, and Czechia participated in training and collaboration in the semiconductor field.

NTU hosted intensive training courses during the period. Students were introduced to the latest semiconductor designs and conducted hands-on practice in the cleanroom lab. After one week of lectures, students headed to TSRI for internships, gaining practical experience, and a deeper understanding of the industry. The training program aims to attract international talent to pursue further studies and career opportunities in Taiwan, promote exchanges and collaboration between Taiwan and Europe in the semiconductor industry, technological development, and talent cultivation, and strengthen global technological linkages.

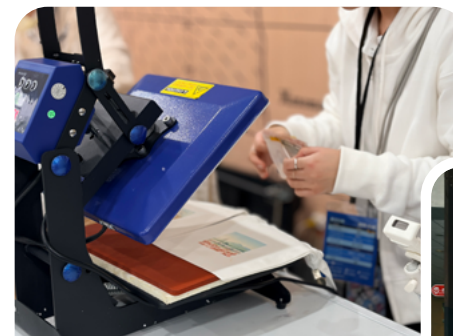


International students visiting and practicing in a cleanroom lab.

Generative Art Bridges Urban Innovation and Public Discourse

The INTU Creative and Entrepreneurship Program (NTUCEP), in collaboration with the Department of Information Technology of Taipei City Government, co-organized the Taipei Generative Art Festival 2025, with the theme "Marketing Taipei × United We Stand." Combining AI-generated art and public discourse, the festival drew more than 240 creators, students, and citizens. Through showcases of generative art and innovative technologies, the festival sparked students' interest in high-tech entrepreneurship, nurtured their entrepreneurial potential, and fostered connections between interdisciplinary creations and urban issues.

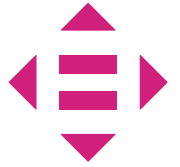
Building upon its long-standing commitment to AI-assisted creation and licensing education, NTUCEP organized workshops on Creative Commons licensing and AI illustration tools to enhance participants' understanding of emerging technologies and ethical considerations in AI use. This year's contestants were given 120 minutes to create four-panel comics, stickers, or card designs addressing themes such as low-carbon travel, cultural tourism, endangered native species, gender equality, urban fitness events, and more. The competition encouraged contestants to respond to social issues through generative art and facilitated the application of outstanding works in urban outreach and cultural promotion, deepening connections between AI and city branding.



A contestant applies their "Maker spirit" to realize AI creativity through heat transfer printing.



NTU and the Taipei City Government co-organized the 2025 Taipei Generative Art Festival.



Reduced Inequalities

Community-Centered Health Practices for Indigenous Communities

In 2025, the NTU College of Public Health team continued its long-standing focus on indigenous health injustice and cultural safety issues. By combining curriculum design with local needs, the team collaborated with the Shounong Community Development Association in Hualien County and the Indigenous People with Disabilities Association in Hsinchu City to provide summer internship opportunities for students, encouraging them to enter the field and learn about cultural care practices in indigenous communities. Students provided basic health services and companionship to elders through attending annual festivals and participating in daily activities at the Shounong Culture and Health Station. They also designed and improved participatory blood pressure record charts, while simultaneously acquiring cultural knowledge and enhancing their cultural sensitivity through practical implementation.

During the internship, some students learned to regard culture as a health asset and further expanded on the idea in their master's thesis research, demonstrating the integration of teaching, service, and academic inquiry. Other students entered the multi-ethnic community of Siya Culture and Health Station, where they gained a deeper understanding of the circumstances and needs of Indigenous people with disabilities by assisting with daily activities and conducting focus group interviews for needs assessment. Through internships and community interactions, students witnessed both the challenges faced by Indigenous people with disabilities and social workers, as well as their acts of mutual assistance and proactive living. The team hoped that the results achieved during these internships would provide a reference for addressing current difficulties. Through cross-disciplinary collaboration, faculty members and students from the College of Public Health deepened their understanding of health services in indigenous communities and the diverse needs of the elderly. The initiative further strengthened the reciprocal integration of teaching, research, and social service, while putting University Social Responsibility (USR) into practice and advancing social inclusion and health equity.



Students participated in community health promotion and care service activities for Indigenous people with disabilities.



Students interacted with elders and local caregivers through home visits to understand long-term care services and health needs in indigenous communities.

"Chengsanzhe": Supporting Young Caregivers

"Chengsanzhe: Young Carers' Guardian" was initiated by Wen-Rui Chiu, a student in NTU's Leadership Program, and formed by students from NTU, NTNU, and NTUT as an intercollegiate action team. Drawing from their caregiving experiences, the team recognized that young carers often shouldered family responsibilities beyond their years while lacking adequate mental health support and social understanding. Centering on the "mental well-being of young carers," the team launched a series of long-term initiatives.

Guided by the belief that "When heavy rain falls in your world, we are here to hold up an umbrella and walk alongside you," the team emphasizes understanding, companionship, and empathy. It has organized eight forum sessions, two mental health support workshops, and one flash mob, raising awareness of young carers. Through three approaches, "Chengsanzhe: Young Carers' Guardian" promotes public awareness through lectures and forums, addresses young carers' psychological needs through support groups and workshops, and connects campuses with resources to establish a sustainable companionship network, ensuring long-term and reliable support.



The "Chengsanzhe: Young Carers' Guardian" team received the Special Award in the 2025 Cathay Excellence Scholarship Project.

The Journey Between the Lands -- Ptumaw: Connecting Culture and Campus Diversity

From September 19, 2025, to January 31, 2026, the NTU Museum of Anthropology presented the special exhibition "Ptumaw: The Journey to Fulfillment – Walking Between the Lands and Cultures." The exhibition showcased the journey of the "Ptumaw: Culinary Fulfillment" team, composed of Indigenous students from NTU and NTNU. In the S'uli Atayal language of Yilan, Ptumaw means "to make something complete," symbolizing connections between people, the land, and culture through farming, ethnobotanical plants, and companionship. For participants, it was both a cultural practice and a journey of rediscovering their identities.

Ptumaw grew from reflections on stereotypes and cultural alienation on campus. Using plants as a medium, the team fostered cross-cultural communication and mutual understanding. At a cultivation field between the 1st Student Activity Center and Dr. Wen-chen Chen Memorial Square, students learned planting techniques from elders, reconnecting with their culture through collective labor. The exhibition highlighted culture as a living practice shaped by everyday participation and encouraged visitors to reflect on the relationship between diverse communities and the land through dialogue and understanding.



Ptumaw team members guided visitors through the exhibition.

Sustainable Cities and Communities



Building Cultural Resilience: Preserving Indigenous Languages and Empowering Communication Across Generations

4 10 11

For over three decades, Associate Professor Li-May Sung of NTU's Graduate Institute of Linguistics has dedicated herself to translating academic research into public educational value. In her teaching, she offers a "Language Fieldwork" course as well as a range of Austronesian language classes, thus guiding students to a better understanding of Taiwan's ethnic communities and equipping them with both linguistic expertise and a commitment to strengthening bonds across communities. Both Indigenous and non-Indigenous students have gone on to engage in language and cultural work, linking academics with local needs while building collaborative networks that bridge research and practice, thereby advancing equity in education. Professor Sung also developed the "NTU Corpus of Formosan Languages", a comprehensive archive covering over 10 Indigenous languages and exceeding 200 oral legends. She is also the author and compiler of a Seediq syntax book alongside several grammatical treatises. By embracing an interdisciplinary approach, Professor Sung has collaborated with technology experts to develop AI translation and Natural Language Processing (NLP). This initiative successfully ensures that endangered languages are preserved within today's digital ecosystem.

As for social education and intergenerational empowerment, Professor Sung served as Director of the NTU Indigenous Languages Research and Development Center from 2016 to 2020, where she trained 13 Indigenous researchers and produced 70 research outputs that helped shape national language policy. In recent years, she has also coordinated a training program for Indigenous language promotion and corpus annotation. Professor Sung has strengthened professional competencies through systematic coursework and training camps, advancing the intergenerational transmission of Indigenous languages. In recognition of her sustained contributions to Indigenous language research and talent cultivation, Professor Sung received the Ministry of Education's 2026 Award for Outstanding Contribution to the Promotion of Local Languages. From campus research to social empowerment, her effort epitomizes university social responsibility in action.

Students performed at Fort San Domingo, Tamsui.

See P.56 for details.

Implementation of the 2025 training program for Indigenous language promotion and corpus annotation, comprising 7 training camps totaling 60 hours to date.



Safeguarding Tribal Sovereignty: Post-Disaster Reconstruction and Knowledge Translation Following the Matai'an Barrier Lake Disaster

On September 23, 2025, torrential rain from a typhoon caused a large creek barrier lake at the upper reaches of the Matai'an River in Hualien County to overflow and breach. Floodwaters mixed with massive amounts of debris then crashed into the town center of Guangfu Township, resulting in severe casualties and infrastructure damage. In response to post-disaster relocation, land expropriation, and reconstruction disputes, concerned students from NTU's Graduate Institute of Building and Planning spontaneously formed the "Fataan (Matai'an) Barrier Lake Action Group." Dedicated to tribal sovereignty, the group members aimed to empower communities to lead their own affairs and foster dialogue, guided by the Amis principle, "Mingodo to kacitodong no niyaro"; Micekeroh to kalalicay no siyakay," which emphasizes respecting each community's responsibility for self-governance while promoting mutual communication and exchange. To achieve this, members self-funded multiple trips to Hualien to support the Fata'an, Kalotongan, and Atomo tribes, while actively documenting policy progress and sharing information on public platforms.

To promote information equity and transparency, the group established the "Fataan (Matai'an) Barrier Lake Action Group" platform, systematically compiling post-disaster policies, news reports, and key records. The platform also features content on disaster prevention and evacuation planning, land expropriation issues, as well as domestic and international cases of interim housing (such as the case of Noto Peninsula in Japan). At the same time, in response to tribal members' needs, the group produced a series of "Post-Disaster Knowledge Guides," making complex legal and engineering information accessible to communities to help build their capacity for autonomous

decision-making. This student-initiated action demonstrates a powerful model of collaboration between the university and Indigenous tribes, respecting Indigenous peoples' spatial subjectivity and cultural dignity in the reconstruction process.



Members of the Matai'an Barrier Lake Action Group conduct an on-site inspection of the embankment with the Atomo tribal patrol team.

Music as a Bridge: Connecting Youth and Local Culture



At NTU's D-School, the course titled "The Art and Practice on Music Cooperation" placed cross-disciplinary teamwork and cultural engagement at its core, guiding students out of the classroom and into local communities where music could become a vehicle for fulfilling USR. The course prompted students to act as creators, cultural observers, and social participants. Through these roles, they built artistic fluency, cultivated cross-cultural communication skills, and fostered a two-way dialogue between youth and local culture.

On December 7, 2025, partnering with local performing arts group Tamsui Beiguan Ensemble and with the support of the Tamsui Historical Museum, the course staged an outdoor concert titled "Wind Through the Pines SONATA — Listening in Tamsui" at Fort San Domingo. The 18 students and the veteran Beiguan artists co-created and performed the concert together. Taking the classic Beiguan piece "Wind Through the Pines" as its core and weaving in elements of rock, classical, electronic music, and soundscapes, the concert staged an encounter between the traditional and the contemporary. Students divided their responsibilities across music, visual design, sound engineering, and event production, grounding their creative work in local history and culture. Through art, the course drew together resources of both higher education and local culture, fostering collaboration and mutual trust between young people and their surrounding communities. The process allowed traditional music to be viewed anew through a contemporary lens.



Students performed "Wind Through the Pines" at Fort San Domingo with the Tamsui Beiguan Ensemble.

Responsible Consumption and Production



Black Soldier Fly Farming in Pacific Island Countries: Waste Management and Feed Production

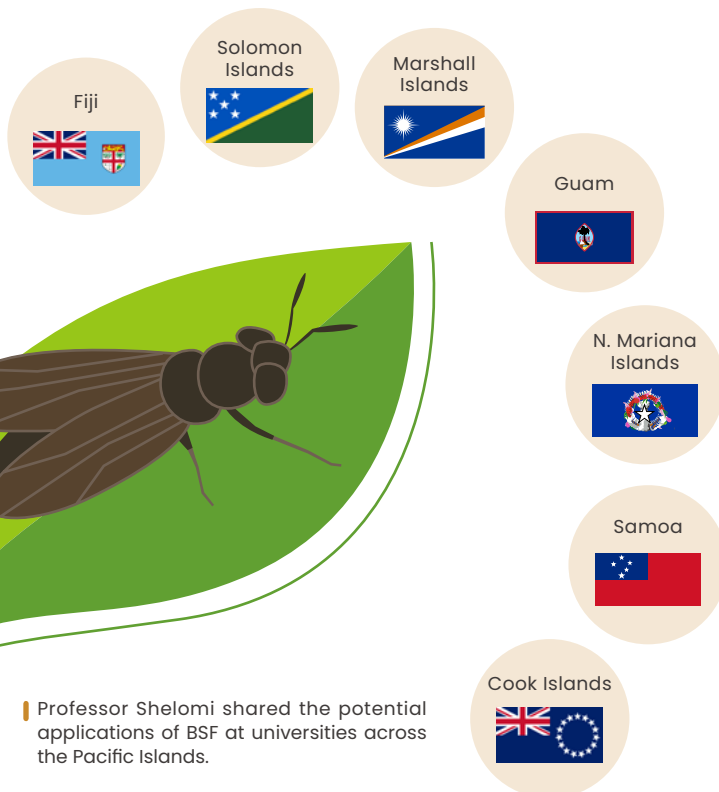
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Black Soldier Fly (BSF, *Hermetia illucens*) farming has gained global attention in recent years for its ability to convert organic waste, such as food waste and agricultural residues, into high-protein animal feed. BSF farming not only effectively reduces waste but also provides a sustainable, low-cost local feed source, thereby reducing reliance on imported soybean meal and fishmeal. This is particularly significant for resource-constrained economies, including Pacific Island countries. With support from the National Science and Technology Council, the research team led by Associate Professor Matan Shelomi from the NTU Department of Entomology has developed probiotic microbial formulations that can decompose lignocellulosic biomass, aiming to enhance the efficiency of BSF larvae in utilizing fiber-rich green waste and agricultural residues. In 2025, the team hosted interns from Indonesia, equipping them with key expertise they could apply in their home country.

To promote the benefits of BSF farming and strengthen international cooperation, Professor Shelomi delivered guest lectures during the first half of 2025 at universities across Fiji, the Solomon Islands, the Republic of the Marshall Islands, Guam, the Commonwealth of the Northern Mariana Islands, Samoa, and the Cook Islands. During this period, Professor Shelomi collaborated with the University of the South Pacific in Fiji to investigate the acceptance of insect-fed animal products among students and farmers, and later published the first confirmed field observation records of the BSF in Tuvalu. The team is currently advancing ongoing research, focusing on surveys of local BSF populations across regions to evaluate the feasibility of establishing or expanding local farming facilities, to enhance the sustainability of local agriculture and feed industries.



Black Soldier Fly (*Hermetia illucens*)
BSF converts organic waste into high-protein animal feed.



Professor Shelomi shared the potential applications of BSF at universities across the Pacific Islands.

Applications of Multimodal AI in Circular Economy Policy Analysis

12

As global resource consumption and environmental pressures continue to escalate, achieving a balance between economic development and sustainability has become a shared challenge for governments, industries, and academia worldwide. While Circular Economy (CE) is recognized as a key solution, identifying optimal strategies within complex policies, industrial data, and resource flows remains highly challenging. To address the challenge, a cross-disciplinary research team led by Professor Hwong-Wen Ma from the NTU Graduate Institute of Environmental Engineering (GIEE) integrated Multimodal GPT (Generative Pre-trained Transformer) into systems analysis and scenario simulations for CE. The study was published in the international journal *Resources, Conservation and Recycling* in 2025.

The study was based on Taiwan's material flow data and policy regulations ranging from 2013 to 2022. It marked the first time that Multimodal GPT was introduced into the analytical workflow. By simultaneously processing text, data, and imagery, the Multimodal GPT rapidly integrated complex policies, industrial statistics, and Material Flow Analysis (MFA) results to construct a scenario simulation model with adjustable policy variables. The research team combined MFA with System Dynamics (SD) models and leveraged the generative and reasoning capabilities of Multimodal GPT to construct an end-to-end analytical pipeline, spanning policy scenario configuration, data computation, and result visualization. This methodology not only reduced analysis time but also enabled policymakers and stakeholders to more intuitively comprehend the long-term impacts of policies on resource circulation and the environment. Under the simulated scenario of "Population Stability and Improved Resource Efficiency," the study projected that the circular material use rate would increase from 22% in 2022 to 29% by 2030, while resource productivity would rise from NT\$65 to NT\$88 per kilogram. In conclusion, AI can effectively enhance scientific rigor and transparency of CE policy design, offering significant potential for future applications in climate change mitigation and resource management.

Creating a Second-Hand Exchange Space to Practice Sustainable Living

The NTU Bizarre Bazaar club is dedicated to creating spaces for the exchange of second-hand objects. It embraces the idea that "the movement of objects reflects the journey of life," enabling each item to extend its value by serving multiple users. In November 2025, the club organized the Bizarre Bazaar Flea Market, featuring over ten booths. Stallholders engaged with participants through various methods tailored to their preferences, including sales, exchanges, giveaways, and interactive games. This setup allowed participants to experience the possibilities of second-hand item exchange through interaction, prompting them to reconsider the relationship between people and their possessions.

Moreover, the club curated several activities, such as second-hand book exchanges, points-for-books redemptions, vintage ring-toss games, and introductory sessions to the "Bizarre Bazaar" philosophy. These activities encouraged participants to endow old items with new stories, adding to their value through sharing and exchange. The club aspired to foster a deeper appreciation for vintage items through the flea market, believing that imperfect objects become more captivating through unique stories. This initiative aimed to enhance resource circulation and public participation in a sustainable lifestyle.



Participants exchanged secondhand items through sales, donations, and trades. Aiming to reduce resource waste and promote a green circular economy.



Climate Action

Driving Community Climate Action through Scientific Monitoring: Creating Smart Worship Environments and Comfortable Streets

11 13

The NTU SC+ Project Team has established core pilot sites in Daxue Village, Da'an District, and Zhongshun Temple in Muzha, Wenshan District, Taipei, adopting a "Living Lab" approach. By integrating air quality and multiple environmental monitoring data, the team is able to provide data analysis and visualization. This allowed the team to assist local communities and temple management with real-time environmental assessment, thereby integrating science with community governance. At the Zhongshun Temple, the team collaborated with instrument manufacturers to install an air quality index system, smart switches, automatic fan control, and a monitoring system for the temple square. These efforts established an environmental governance model centered on "smart ventilation, natural ventilation, self-regulated airflow management, and source reduction (incense)." In 2026, monitoring results from the first day of the Lunar New Year showed that air quality improved compared to the previous year, despite a significant increase in the number of worshippers. This demonstrates the effectiveness of technology-assisted management. The team also developed environmental education materials and organized instructor training programs, in collaboration with the Zhongshun Temple board of directors and supervisors, volunteer teams, and the Wenshan Community College. By integrating coursework with real-world application, students were guided to complete 91 questionnaire-based interviews with worshippers. The team continues to promote the "cleaner incense air flow" initiative, gradually transforming Zhongshun Temple into a demonstration site for environmental education.

At the Daxue Village, the team has continuously optimized the mobile monitoring device, accumulating street-level environmental data and analyzing digital models. These findings assist local residents in creating more comfortable daily movement circulation. At the same time, by integrating course and research, the team conducted scientific data analysis under a 2035 warming scenario, along with stakeholder interviews. Moreover, flowering period data of the sacred garlic pear (*Crateva religiosa*) at Wenzhou Park were collected. Through the integration of climate data and image recognition, the team estimated visitor flows during the flowering season, providing an important reference for future community climate change adaptation.



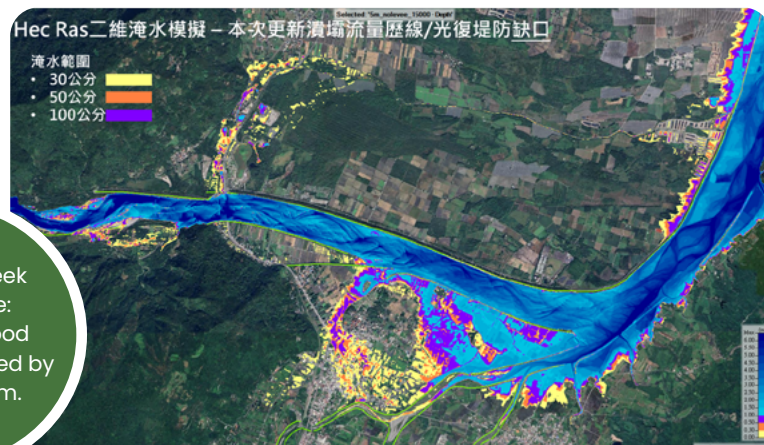
Zhongshun Temple real-time air quality monitoring interface.

NTU Team's Early Warning Leads to Record Evacuation at Matai'an Creek Barrier Lake

11 13

Professors Gene Jiing-Yun You and Kuo-Hsin Yang of the Department of Civil Engineering and the International College's Master Program in Disaster Risk Reduction and Resilience assisted the Ministry of the Interior in conducting disaster analysis of the Matai'an Creek Barrier Lake in Hualien, providing an evacuation assessment model that became a key basis for decision-making. According to the Central Emergency Operations Center, more than 8,000 people were evacuated during this event, a record high for a single township-level evacuation. The Ministry of the Interior stated that among multiple evacuation models, the assessment developed by the NTU team was ultimately adopted, leading to an expansion of the evacuation area.

According to the Matai'an Creek Barrier Lake Monitoring website, the NTU disaster prevention team assessed on September 21, 2025, that the potential flooding caused by overflow would be more severe than previously estimated. This prompted central authorities to preemptively designate 8,000 residents for evacuation on the same day. The decision to expand evacuation operations before the typhoon's arrival successfully reduced the potential risk of casualties.



Matai'an Creek
Barrier Lake:
Predicted Flood
Range Simulated by
the NTU team.

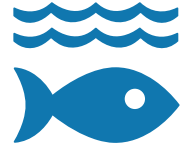
International IPCC Scholars Forum: Documentary Premiere and Special Forum

The NTU Risk Society and Policy Research Center, in collaboration with organizations including O'right, hosted the documentary premiere and special forum, *International IPCC Scholars Forum: The Last Ice of the Arctic - Greenland Glacier Melt and the Global Crisis*, at NTU on April 14, 2025. Dr. William Colgan, a leading scholar in global climate change, noted that even if global carbon emissions were halted immediately, approximately 3% of Greenland's ice sheet would continue to melt, potentially causing around 27 centimeters of sea-level rise. He emphasized that the impacts would extend beyond flooding, including saltwater intrusion into urban freshwater systems, contamination of drinking water, agricultural disruption, and infrastructure damage.

Olennguaq Kristensen, an Inuit hunter from the Savissivik settlement in Greenland, shared firsthand observations of environmental change. In the past, sea ice typically melted in July, but melting now occurs much earlier, while the ice itself has become increasingly fragile. As a result, sled dogs can no longer safely bear weight, hunting areas have significantly diminished, and even traveling routes have been affected. Although Taiwan and Greenland are geographically distant, both coastal and island communities face similar environmental and cultural challenges brought about by climate change. The forum attracted nearly 300 participants, including students, scholars, business representatives, and media professionals, fostering deeper public understanding and awareness of the climate crisis through scientific research and frontline witnesses.

The Inuit people of the Arctic invented slit snow goggles to reduce sunlight reflected from snow-covered landscapes, protecting their eyes from UV damage while improving visibility.





Life Below Water

Seagrass Research Supports Marine Sustainability

4 14

Maintaining biodiversity is crucial to the wellbeing of humans and animals, while producers contribute to an ecosystem by providing food to herbivores. In the marine ecosystem, one of the most important producers is the seagrass. As part of an industry-academia collaboration, NTU Institute of Fisheries Science Assistant Professor Yu-Chi Wu and Business Today Magazine established a seagrass laboratory for cultivation and research. On Earth Day (April 22nd), 2025, the two parties co-organized a press conference, where representatives from government agencies, academic institutions, and private companies launched "Project Blue 2025." With seagrass as the theme, Project Blue 2025 aimed to raise awareness of marine conservation and restore seafloor ecosystems. Business Today Magazine won the Best Community Service Project at the Asian Media Awards 2025 as a result of the partnership.

Professor Wu also partnered with Nobel Biotech CEO Kuan-Cheng Li and Tai-Ying Wu, the Executive Secretary of the Marine Education Center, National Park Service. The team has provided four lectures for business groups and marine educators, during which they highlighted the importance of marine biodiversity, seagrass, and blue carbon. They also emphasized that the genetic diversity in seagrass, a result of sexual reproduction, allowed the plant to adapt to environmental changes and resist disease. During the lecture, participants planted seagrass in aquariums and became familiar with its growth through daily care and observation. The team has also brought seagrass research to elementary school students and fostered a sense of responsibility for marine conservation and sustainable living.



The seagrass laboratory with a cultivation system



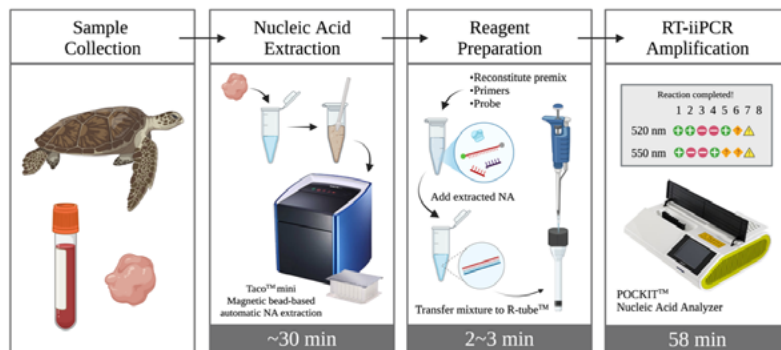
Lecture participants care for seagrass and observe its growth through the aquariums

NTU Team Advances Ocean Conservation Through Research and Public Advocacy

14

Professor Wei-Cheng Yang of the School of Veterinary Medicine, NTU, and his team have long dedicated themselves to monitoring cetaceans (whales and dolphins), developing new prognosis methods, improving the health of marine wild animals, and conducting conservation research. In 2025, the team published their findings on cetacean stranding events in Taiwanese waters over 24 years. After analyzing 1,884 stranding events involving 2,225 cetaceans, the team discovered that stranding events have risen in frequency since 2015. These events are highly related to manmade causes, such as ocean environmental changes due to climate change and bycatch in the fishing industry. This study highlights the vulnerability of bottlenose dolphins, finless porpoises, and other species, calling for stronger monitoring and management to avert their decline. The research team also shed light on how cetaceans heal wounds. They have proven the existence of $\gamma\delta$ TCR+ and WC1+ cells and their role in facilitating wound recovery for the first time, furthering our understanding of immune response and tissue regeneration in cetaceans.

Outside of research, the team worked with the Ocean Affairs Council to develop a highly sensitive portable Isothermal PCR (iiPCR) kit for detecting major infectious diseases in sea turtles. The iiPCR kit targets ChHV5 and parasites, increasing efficiency and accuracy in diagnosis while in the wild. This technology has been demonstrated at international conferences and is scheduled to be applied in rescue and conservation efforts, aiming to facilitate regional disease monitoring and data integration. Professor Yang has also set up the Facebook page "[Cetacean Investigation Bureau](#)," promoting cetacean conservation knowledge through research sharing and monitoring of stranding events. The fanpage emphasizes a data-driven approach to increase public awareness, support the development of conservation policies, and strengthen the basis for marine conservation sciences.



A diagram of the application of the iiPCR kit, co-developed by a team led by Professor Wei-Cheng Yang and the Ocean Affairs Council.

Creating Conversation Among Coastal Communities Through Cross-Disciplinary Co-Learning and Knowledge Translation

Coastal communities often pay attention to issues related to ocean water quality. For example, the effects sunscreen ingredients have on marine biology, the correlation between coastal algae growth and coral decline, and the impacts of port pollution on surrounding ecosystems. In response, Associate Professor Huei-Ting Tina Lin of the Institute of Oceanography, NTU, has launched a course titled "Environmental Chemistry and Sustainable Management of Coral Reefs," during which students read the latest studies, analyze data, and present their findings in a digestible manner to coastal communities.

The course combines outdoor sampling and experimental analysis. Students are assigned hands-on practice based on their background, so they may be able to research and report based on local data. Taught entirely in English, the course encourages local students to work with international students. The final presentations are conducted in Mandarin, English, or Taiwanese, depending on the coastal communities. The course takes students to the northeastern coast of Taiwan, Xiaoliuqiu, Yilan, Taitung, Green Island, and other places, helping students connect with local communities, increase awareness of ocean issues, and spur action. Meanwhile, community members gain a better understanding of marine science. The course hopes to advance further collaboration and science awareness opportunities.



Students sharing their research findings with coastal communities.



Life on Land

Community Engagement in Restoring Landslides with Native Plants and Local Microorganisms

15 17

Under the guidance of Professor Chun-Neng Wang, students from the NTU International College's Master Program in Biodiversity have been conducting field research in the Taroko and Hehuan Mountain regions and are dedicated to developing technology to restore landslides with Taiwanese native plants and local microorganisms. They noticed that Taiwan had been using non-native plants for slope restoration, which might affect the local ecosystem. Also, mid- to high-altitude regions had long lacked appropriate restoration technology using native plants. Drawing on nine years of research, the team screened more than 150 pioneer plants, selecting approximately 30 grass species with rapid colonization potential and further identifying flowering plants that provide ecosystem services. Next, the team added natural plant biostimulants and fertilizer made from local microorganisms to the cultivation media for seed balls used in spray planting or drone seeding. It functioned as locally-isolated environmental probiotics, increasing the likelihood of rapid stabilization and ecological recovery in landslide-affected areas.

In collaboration with the Qingjing community and NTU Meifeng Highland Experimental Farm, the team collected local seed and microorganisms as well as did restoration practices. It created a low-cost local model that echoed nature-based solutions, which was applied to the restoration of landslide-affected areas following the Taroko earthquake. Students in the team are from North America, Latin America, Europe, and Africa. Specifically, the student from Haiti hopes to apply the experience to benefit his homeland, demonstrating the importance of international knowledge exchange. This study not only enhanced the synergy between biodiversity restoration and community engagement but also won the Top Prize of 2 million NTD in the TSMC Ecological Coexistence Project.



The "Dancing with Taiwania" program leads participants to observe canopy ecology and experience tree-climbing activities.

See P.64 for details.

At landslide-affected areas, airborne collectors are used to capture environmental microorganisms and plant-beneficial microbes surrounding fast-growing native meadow species.



NTU Team Overcame the Data Limit and Developed New Phenological Indicators of Climate Change 13 15

The impact of climate change on biodiversity has been a critical issue in contemporary studies, with a focus on the phenological responses to temperature variability. Generally speaking, constructing a model exploring the connection between climate and phenology requires data from long-term, regular observations to ensure its scientific rigor and validity. Yet in tropical and subtropical regions, where global biodiversity is concentrated, phenological responses to temperature variability remain poorly quantified due to limited long-term monitoring networks. To overcome this challenge, a team of graduate students from the International Degree Program in Climate Change and Sustainable Development (IPCS), NTU has been developing new phenological indicators that can be applied in data-scarce regions.

The team proposed new Cross-Scale Coarse Indicators (CSCIs) by integrating open-source datasets, such as the Fifth Generation European Centre for Medium-Range Weather Forecasts Reanalysis (ERA5) and citizen-science records of flowering. The indicators addressed spatial and temporal mismatches and overcame several limitations, including coarse data resolution and imprecise observation locations. Even in the absence of formal long-term monitoring networks, the indicators can still capture ecologically meaningful temperature-phenology relationships. The results highlight CSCIs as a scalable and transferable tool for phenological research in tropical and subtropical regions and a practical foundation for cross-regional climate-biodiversity assessment. The findings were published in *Ecological Indicators*, a world-renowned journal on environmental science and ecology, in 2025.



Crateva religiosa was one of the key species identified in the study. The team found that its flowering phenology is likely to be sensitive to climate change, despite the lack of previous reference studies.

Environmental Education and Forest Sustainability in NTU Experimental Forest

The NTU Experimental Forest was awarded two honors, “Outstanding Environmental Education Site” and “Outstanding Facility Subsidy Program”, at the “2025 Environmental Education Certification Excellence Awards” organized by the National Institute of Environmental Research, Ministry of Environment. These recognitions highlight the Experimental Forest’s long-term achievements in environmental education and sustainable forest management. Following the ceremony, the delegation was invited to the Presidential Office for an audience with Vice President Bi-Khim Hsiao, demonstrating high recognition of the University’s professionalism in advancing environmental education.

In recent years, the Xitou Nature Education Area (within the Experimental Forest) has continuously developed environmental education curricula, improved site facilities, and enhanced interpretation services. Through forest ecology experiences, environmental issue discussions, forest therapy, and diverse learning activities, participants are guided to understand the importance of forest conservation in natural settings. In terms of site management, ecological resources and trail interpretation systems have been integrated and improved, whereas the safety and accessibility of educational facilities have been enhanced. Under the Facility Subsidy Program, infrastructure improvements and curriculum planning have strengthened the site’s educational functions and overall teaching quality. Looking ahead, the NTU Experimental Forest will continue to deepen environmental education and cross-disciplinary collaboration, leveraging its forest sites as an educational platform for ecological conservation.



NTU Experimental Forest conducted a hands-on trail-making activity, promoting the reuse of discarded wood materials.



Peace, Justice and Strong Institutions

Dialogue on Parental Rights and Children's Rights in High-Conflict Divorced Families

On November 14, 2025, the NTU Children and Family Research Center, sponsored by CTBC Charity Foundation (NTUCFRC), in collaboration with the Judicial Yuan, hosted the "2025 Children's Rights Month International Seminar" in observance of International Children's Rights Day on November 20. The seminar centered on "Parental Rights and Children's Rights in High-Conflict Divorced Families." The event convened Taiwanese and international scholars alongside practitioners, drawing approximately 150 attendees, including judges, Family Matters Investigation Officers, children and youth representatives, psychologists, and social workers. Discussions centered on protecting children's rights and the practical challenges of family disruption. The opening remarks emphasized that resolving family cases extends beyond legal adjudication. It encompasses family support and the safeguarding of children's developmental rights. The speaker highlighted the necessity of interdisciplinary and cross-system collaboration to ensure that children's voices are heard in the decision-making process.

The seminar covered topics including fatherhood, child custody in domestic violence cases, and the right of the child to be heard. Scholars pointed out that in high-conflict divorce cases, fathers are often marginalized, requiring judicial practice to balance risk assessment with the best interests of the child. In cases involving domestic violence, parental visitation arrangements should balance emotional bonds with psychological safety, using progressive adjustments and interdisciplinary collaboration to minimize secondary trauma. Furthermore, the event highlighted the importance of children's right to be heard and access to judicial proceedings. It also proposed child-friendly inquiry principles to improve children's expression and level of perceived understanding. The seminar concluded with a panel discussion that facilitated an in-depth exchange among panelists. Attendee feedback indicated that the seminar successfully fostered cross-disciplinary dialogue while providing practical and enriching professional guidance for child and youth practitioners.



NTUCFRC and the Judicial Yuan co-hosted the 2025 Children's Rights Month International Seminar.

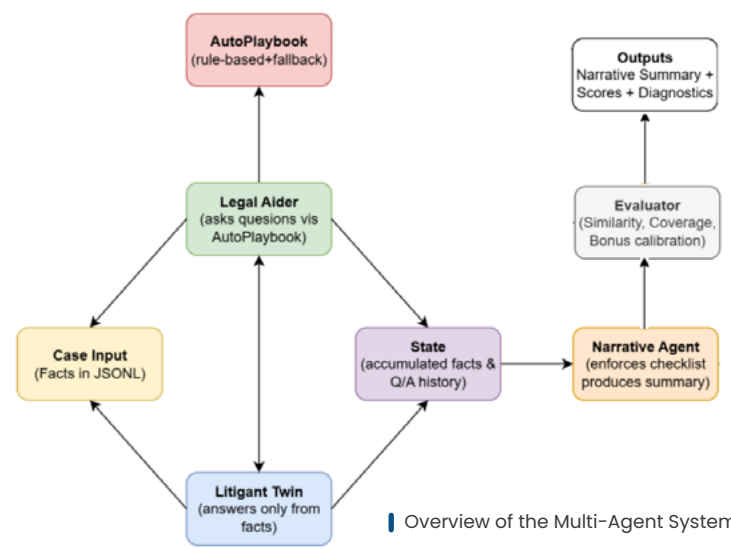


Multi-Agent Systems Enhance Legal Consultation Efficiency

16

In December 2025, a research team from The Research Center for Digital Law at the NTU College of Law attended the 38th International Conference on Legal Knowledge and Information Systems (JURIX 2025) in Turin, Italy. The team presented their full paper, *Structured Fact Construction in Legal Aid Consultations: A Multi-Agent Legal Information System*, which received an Honorable Mention. The research utilized large language models (LLMs) to develop a “Multi-Agent System.” By deploying multiple artificial intelligence agents (AI agents) with specialized functions, the system guides users step-by-step through clarifying the facts of their case, supplementing critical information, and organizing legal issues in a structured manner during legal consultations.

This system uses an easy-to-understand, interactive questioning mechanism to help the public navigate labor, family, and consumer disputes when they are unfamiliar with the legal procedures. This approach assists users in organizing crucial legal facts, thereby enhancing the efficiency of legal services. Moving forward, the research team plans to collaborate with legal service student clubs to integrate the system into campus legal services. This initiative will cultivate students' legal consultation capabilities while providing the public with a more user-friendly legal assistance tool, successfully demonstrating the practical outcomes of cross-disciplinary integration between law and AI.



Overview of the Multi-Agent System Framework.

The NTU Legal Service Club: A Free Legal Consultation Service

The NTU Legal Service Club, established for over 40 years, has served as an exemplary model of social service within the NTU College of Law. In 2025, the club continued its mission of providing free legal consultation services, holding a total of 16 sessions throughout the year. Averaging approximately 25 cases per session, the club accumulated an annual volume of over 200 cases, successfully assisting more than 200 citizens in clarifying various legal uncertainties. The scope of those consultations encompassed civil law, criminal law, and other related legal disputes. Whether addressing ongoing litigation or matters of out-of-court negotiation and mediation, the club provided concrete explanations and strategic recommendations under professional guidance, empowering litigants to better comprehend their rights and determine a subsequent course of action.

Through regularly scheduled and steady service mechanisms, the club has effectively channeled its legal expertise back into society, assisting citizens with appropriate support and facilitating the resolution of disputes. These achievements reflect the College of Law's long-term dedication to public affairs, giving practical expression to NTU's commitment to USR, and have received positive feedback from the majority of those served.



NTU Legal Service Club Facebook page, promoting free legal consultation services.



Partnerships for the Goals

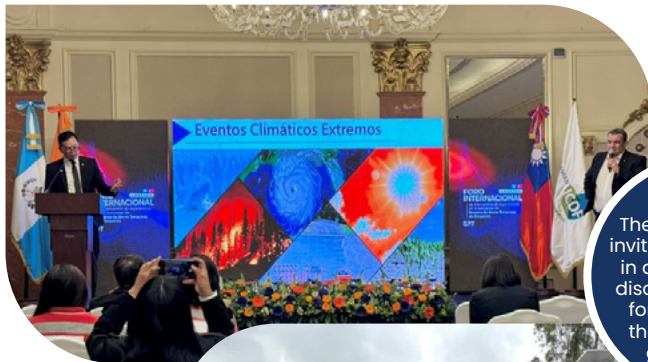
AI-Integrated Monitoring Techniques: NTU Department of Civil Engineering Team Supports Disaster Early Warning Systems in Guatemala

11 13 17

Since 2023, in response to compound disasters triggered by extreme climates, the NTU Center for Weather and Climate Disaster Research (WCDR) and Department of Civil Engineering, in collaboration with the International Cooperation and Development Fund (TaiwanICDF), have been working in partnership with the Guatemalan National Coordination for Disaster Reduction (CONRED), and the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) to implement the "Flood and Landslide Disaster Prevention and Response System Development and Capacity Building Project." The project aims to assist the Guatemalan government in establishing a sustainable intelligent disaster prevention system through the integration of AI and smart monitoring techniques.

The project began by integrating spatial data, including topography, land-use, river systems, and public infrastructure, to develop a high-resolution Digital Elevation Model (DEM). Various flood scenarios were simulated to generate flood potential and risk distribution maps, enabling the Guatemalan government to identify high-risk areas before disasters. In terms of real-time monitoring, the team installed 3 IoT-based slope and hydrology monitoring stations in high-risk basins. These stations integrate rainfall, water level, and image data, which are transmitted to the disaster response platform. Through a visualized interface displaying monitoring data and alert thresholds, the project supports the government in assessing disasters in real time and initiating responses.

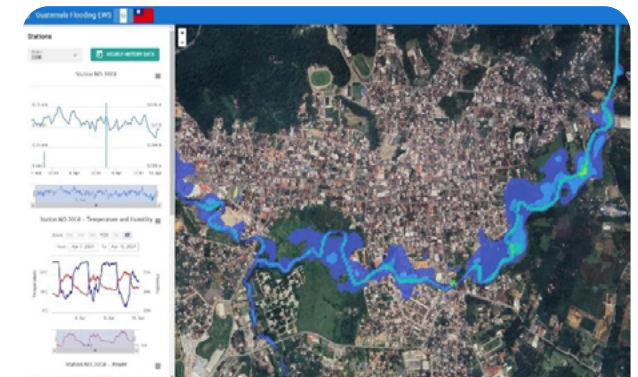
In addition to system development, the team has provided drone operation training and three-phase disaster prevention education and training programs. It has also assisted in training over 100 disaster prevention personnel in Guatemala and building local communities' capacity in monitoring, data analysis, and early warning interpretation. Some participants were further invited to Taiwan, bringing Taiwan's experience in disaster prevention technology and community-based disaster prevention back to their communities. This project not only establishes disaster prevention systems but also integrates technology implementation, talent cultivation, and community resilience enhancement. It progressively builds an AI- and data-driven intelligent disaster prevention model, while demonstrating Taiwan's tangible contributions to high-tech disaster prevention and international cooperation.



The NTU team was invited to participate in an international disaster prevention forum hosted by the Guatemalan government.



The IoT-based slope and hydrology monitoring stations in Guatemala.



The Flood Potential and Debris Flow Monitoring and Response System in Guatemala.

NTU Science and Technology Research Institute for DE-Carbonization (STRIDE-C) and the School of Engineering at the University of Tokyo jointly developed supercritical geothermal fluids exploration technologies.

7 13 17

Geothermal energy is regarded as an important form of clean and renewable energy and a key pathway for Taiwan's transition toward net-zero carbon emissions. A critical factor in its development is rooted in understanding subsurface rock structures and fluid migration processes. "Supercritical geothermal fluids," characterized by temperatures exceeding 400°C, possess substantial energy potential, with power generation capacity exceeding that of conventional geothermal systems by more than tenfold. They have become a major focus of next-generation geothermal energy development in countries such as Japan, New Zealand, and the U.S. However, exploration technologies for these resources remain highly challenging.

Professor Chen-Hao Kuo from the Science and Technology Research Institute for DE-Carbonization (STRIDE-C) at NTU was invited by Professor Takeshi Tsuji from the School of Engineering at the University of Tokyo to participate in cross-national collaboration on seismic monitoring and supercritical geothermal exploration at the mountainous Kuju volcanic field, Japan. The team achieved breakthrough progress with findings published in the international journal *Communications Earth & Environment*. The team applied seismic reflection techniques to conduct 3D subsurface imaging. By integrating advanced imaging technology, they successfully enhanced spatial resolution. In addition, data were analyzed using an AI-based seismic data processing system developed in Taiwan, enabling more refined 3D visualization of volcanic subsurface structures. These findings provide comprehensive insights into the trapping, migration, and seismic triggering mechanisms of supercritical fluids.

The research found that at depths of approximately 2 to 3 kilometers below the surface, a low-permeability sealing layer may exist, effectively trapping supercritical fluids. However, in certain areas, faults penetrate the sealing layer and create "permeable windows" that facilitate upward fluid migration. As these fluids ascend, they undergo phase transitions from supercritical to gas or liquid, accompanied by microseismic events. The team also applied a Taiwan-developed AI-based microseismic monitoring system to the seismic monitoring network of volcanoes in Kyushu, enabling further 3D structural analysis of volcanic systems, including magma-related distribution, fracture, and stress fields. This research overcomes the limitations of inadequate imaging resolution in conventional geothermal exploration and demonstrates the potential of integrating AI with seismic wave detection for energy exploration and geological monitoring. It not only contributes to improving the efficiency of geothermal energy development but also provides new technological pathways for renewable energy development and disaster risk monitoring.

NTU's "Design Your Life" Course Goes to Malaysia, Advancing Cross-National Career Exploration Education

In September 2024, in partnership with the Malaysian Alumni Association of National Taiwan University, PathFinder Life Design Association introduced the popular "Design Your Life" course from the College of Design and Innovation (D-School) to Malaysia. The team organized career exploration workshops for 300 secondary school students and engaged in exchanges with 30 educators in Malaysia. The team found that Malaysian students face similar uncertainties in career decision-making as students in Taiwan. This highlights the cross-cultural applicability of the design thinking-based exploration framework. The project was supported by Taiwan's Ministry of Education under the Taiwan Global Pathfinders Initiative (TGPI). Yu-Hsuan Chen, co-founder of the PathFinder Life Design Association and a D-School staff member, conducted six training sessions at the D-School, preparing students to be facilitators in overseas teaching and international activities.

From July to August 2025, the team further conducted five additional workshops at Malaysian secondary schools and visited three institutions of higher education in Malaysia, using the "Design Your Life" course to guide students in exploring their identities and future pathways. In December 2025, to sustain the outreach, the team and the Association jointly organized a 3-day, 20-hour "Design Your Life" teacher empowerment training workshop at Foon Yew High School, Kulai, Malaysia. A total of 27 teachers from various secondary schools across the country participated, sharing teaching tools and facilitation methods while co-developing and refining approaches to better address the needs of Asian youth in career exploration education.



Teacher training workshops were conducted in Malaysia, adopting a facilitation-based approach to support students in their career exploration journeys.



Appendix

STARS (Sustainability Tracking Assessment & Rating System) Content Index

Corresponding Chapters and Sections			STARS Index
<u>About This Report</u> <u>A Word from the President</u>			PRE 1 Executive Letter PRE 4 Reporting Methodologies
<u>Chapter 1 About NTU</u>			PRE 2 Points of Distinction PRE 3 Institutional Characteristics
<u>Chapter 2</u> <u>NTU Sustainability Governance</u>	<u>2.1 Governance Structure and Governance Diversity</u>	<u>I. Governance Structure</u>	PA 3 Institutional Governance
		<u>II. NTU Sustainability Governance Framework</u>	PA 1 Sustainability Coordination
		<u>III. Stakeholder Communication</u>	PA 3 Institutional Governance
	<u>2.2 Endowment Management and Sustainable Investment</u>		PA 4 Sustainable Investment Program PA 5 Investment Holdings PA 9 Committee on Investor Responsibility PA 10 Sustainable Investment PA 11 Investment Disclosure

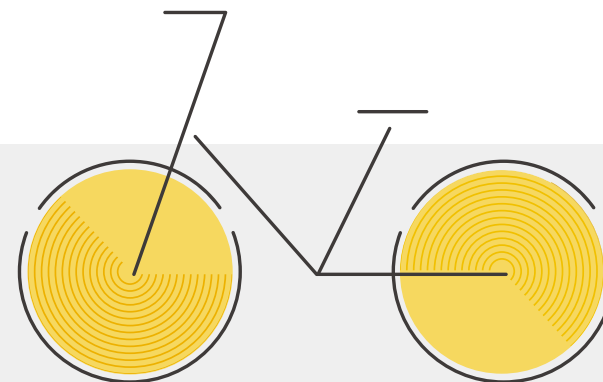
Corresponding Chapters and Sections			STARS Index
Chapter 3 <u>Campus Sustainability</u>	<u>3.1 Our Academic, Research Influence and Sustainable Action</u>	<u>I. Cultivating Transdisciplinary Leaders in a Learner-Centered Environment</u>	AC 1 Sustainability Course Offerings AC 2 Undergraduate Programs AC 3 Graduate Programs AC 4 Applied Learning EN 1 Outreach and Communications EN 3 Staff Engagement and Training EN 7 Continuing Education EN 9 Inter-Campus Collaboration
		<u>II. Supporting Social Development with Academic Research</u>	AC 6 Sustainability Research AC 8 Responsible Research and Innovation EN 5 Civic Engagement EN 6 Community Partnerships
		<u>III. Community Engagement and Sustainability Promotion Led by Students</u>	EN 1 Outreach and Communications EN 2 Co-Curricular Activities EN 5 Civic Engagement EN 6 Community Partnerships
	<u>3.2 Environmental Sustainability Governance at NTU</u>	<u>I. Low-carbon Campus</u>	OP 1 Building Design and Construction OP 2 Building Operations and Maintenance OP 5 Energy Use OP 6 Greenhouse Gas Emissions
		<u>II. Smart and Green Mobility</u>	OP13 Vehicle Fleet OP14 Commute Modal Split
		<u>III. Water Management & Recycling</u>	OP 3 Water Use
		<u>IV. Waste Reduction & Recycling</u>	OP11 Materials Management OP12 Waste Generation and Recovery
		<u>V. Sustainable Procurement</u>	OP 9 Sustainable Procurement System OP10 Purchased Goods
		<u>VI. Sustainable Dining</u>	OP 7 Dining Service Procurement OP11 Materials Management
		<u>VII. Biodiversity</u>	I L 24 Biodiversity Assessment

Corresponding Chapters and Sections			STARS Index
<u>Chapter 3</u> <u>Campus Sustainability</u>	<u>3.3 Diversity, Well-being,</u> <u>and Campus Support</u>	<u>I. A Diverse and Inclusive Campus</u>	PA 6 Institutional Climate PA 7 Racial and Ethnic Representation PA 9 Affordability and Access
		<u>II. Campus Health and Well-being</u>	PA 11 Health, Safety and Wellbeing PA 12 Employee Rights PA 13 Pay Equity and Living Wage
<u>Chapter 4</u> <u>Social Impact</u>	<u>SDG 1</u>		EN 2 Co-Curricular Activities EN 5 Civic Engagement EN 6 Community Partnerships
	<u>SDG 2</u>		EN 1 Outreach and Communications EN 6 Community Partnerships
	<u>SDG 3</u>		EN 1 Outreach and Communications EN 5 Civic Engagement EN 6 Community Partnerships
	<u>SDG 4</u>		EN 1 Outreach and Communications EN 6 Community Partnerships
	<u>SDG 5</u>		AC 4 Applied Learning EN 1 Outreach and Communications EN 9 Inter-Campus Collaboration
	<u>SDG 6</u>		EN 6 Community Partnerships EN 9 Inter-Campus Collaboration
	<u>SDG 7</u>		EN 6 Civic Engagement EN 9 Inter-Campus Collaboration
	<u>SDG 8</u>		EN 5 Community Partnerships EN 6 Civic Engagement
	<u>SDG 9</u>		EN 1 Outreach and Communications EN 9 Inter-Campus Collaboration

Corresponding Chapters and Sections		STARS Index
Chapter 4 Social Impact	SDG 10	EN 1 Outreach and Communications EN 2 Co-Curricular Activities EN 6 Community Partnerships
	SDG 11	AC 4 Applied Learning EN 1 Outreach and Communications EN 2 Co-Curricular Activities EN 6 Community Partnerships
	SDG 12	EN 1 Outreach and Communications EN 2 Co-Curricular Activities EN 5 Civic Engagement EN 9 Inter-Campus Collaboration
	SDG 13	AC 4 Applied Learning EN 1 Outreach and Communications EN 6 Community Partnerships EN 9 Inter-Campus Collaboration
	SDG 14	EN 1 Outreach and Communications EN 6 Community Partnerships EN 9 Inter-Campus Collaboration
	SDG 15	EN 1 Outreach and Communications EN 6 Community Partnerships
	SDG 16	EN 1 Outreach and Communications EN 2 Co-Curricular Activities EN 9 Inter-Campus Collaboration
	SDG 17	EN 1 Outreach and Communications EN 2 Co-Curricular Activities EN 9 Inter-Campus Collaboration



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