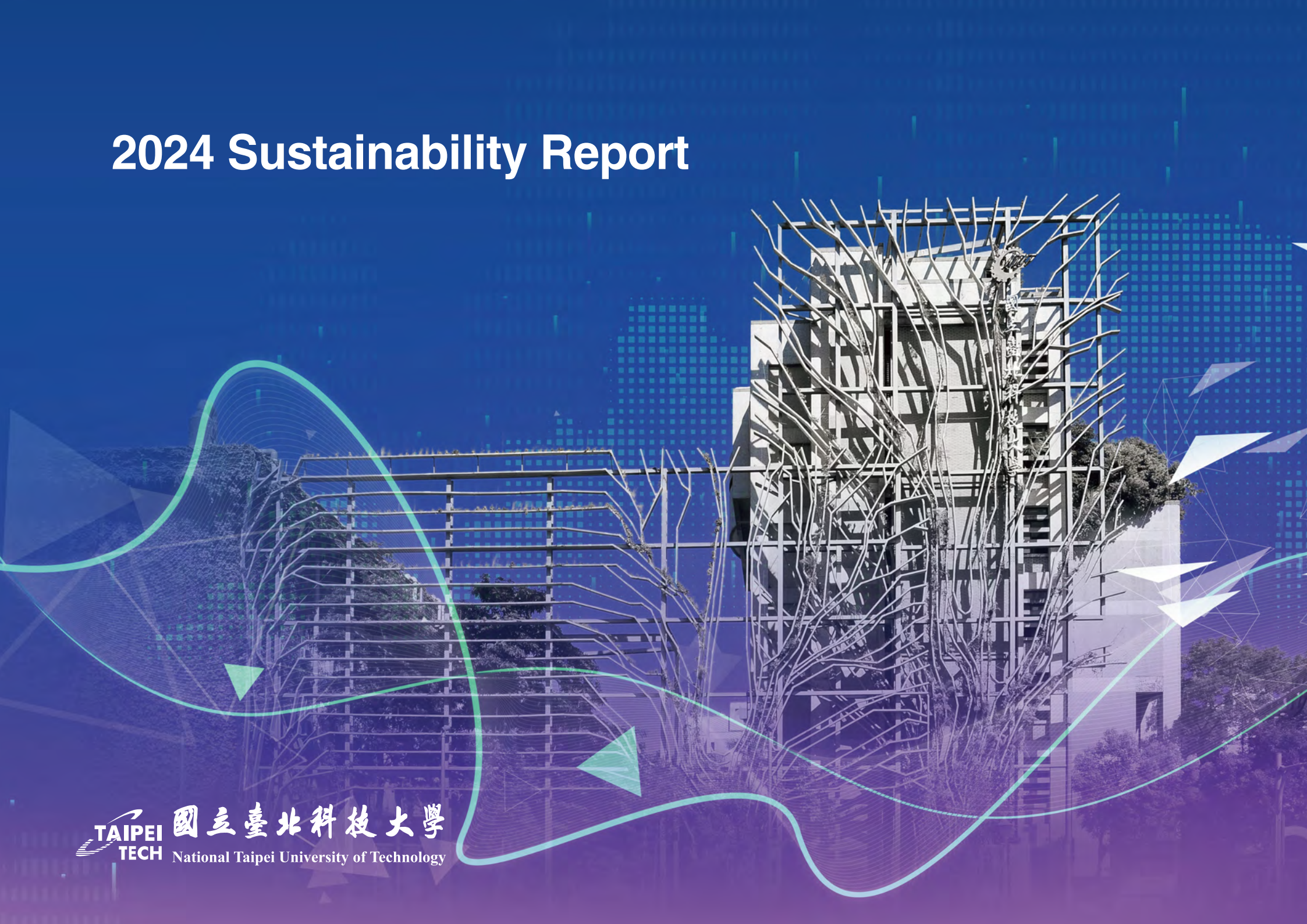
2024 Sustainability Report



TAIPEI TECH 國立臺北科技大學
National Taipei University of Technology

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About the Report

The National Taipei University of Technology (referred to as the "NTUT" hereinafter) has published its first sustainability report since 2021, which is compiled by the Center for Research and Sustainable Development (CVRSD) to fully disclose the promotion and operation effectiveness of the campus and its social impact contributions under the vision of sustainable development, and use it as a tool for stakeholder communication and self-management review and improvement.

• Scope and Period of the Report

The scope of the report covers the main entity of NTUT, excluding NTUT's affiliate, the Affiliated Taoyuan Agricultural & Industrial Senior High School of National Taipei University of Technology. The data disclosed in this report is primarily based on the financial year from January 1, 2024, to December 31, 2024. To ensure the completeness of the information, some data includes the most recent academic information from Academic Years 2023 and 2024.

• Principles and guidelines for the preparation of the report

In addition to the Global Reporting Initiative (GRI) Standards 2021, this Report also referred to the "Educational Standards" framework of the Sustainability Accounting Standards Board (SASB), as well as the Sustainability Tracking, Assessment & Rating System (STARS) developed by the Association for the Advancement of Sustainability in Higher Education (AASHE), as disclosure tools for the Report. Please refer to the appendix for the comparison table.

• Quality Management of the Report

1. A task force composed of sustainability liaisons from each unit is responsible for collecting and compiling data.
2. The content is reviewed for accuracy and completeness by the supervisors of each unit.
3. The report is integrated and edited by the Center for Institutional Research and Sustainable Development.
4. The final draft is reviewed and approved for publication at a school-wide supervisors' meeting chaired by the President.

• Third-party verification

This report was verified in June 2024 by AFNOR ASIA LTD., an independent third-party verification body, in accordance with the AA1000 Assurance Standard V3 and Moderate Assurance, Type 1 of the 2018 Addendum, in order to enhance the transparency and credibility of the disclosed information.

• Date of issuance

The NTUT regularly publishes the sustainability report each year.
- Current edition: Issued in August 2025
- Previous edition: Issued in August 2024
- Next edition: Expected to be issued in August 2026

Feedback

National Taipei University of Technology

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Message from the President and future outlook

In the era of rapid digitization, students' social concern is gradually decreasing. As universities play an important role in social responsibility, they should actively promote social welfare. NTUT has always upheld the idea of "benefiting others and benefiting itself" and actively implemented the university's social responsibility (USR) in various professional fields. The school hopes to help students cultivate their social responsibility and cross-disciplinary cooperation while they learn and grow, and to promote the common progress and growth of schools and society.

The USR of the NTUT is not limited to the classroom, but also actively expands outside. Whether it is the neighboring community or rural areas, we have exerted our professional advantages to identify and solve social problems. The expertise of the school not only serves for academic research, but also actively invests in social practices to expand influence and achieve the two-way inclusion between the school and society. In terms of promoting sustainable campuses, NTUT has been ranked the world's No. 1 high-rise university in the UI GreenMetric World University Ranking since 2020, demonstrating its commitment to sustainable development.

As a university, our core mission is education. Free from political and commercial pressures, we are able to engage in more sincere dialogue with all sectors of society, gain a deeper understanding of societal needs, and fully utilize our abundant resources and professional expertise to address real-world problems and generate maximum social benefits. In promoting sustainable development, we recognize that only by integrating academic expertise with societal needs can we effectively tackle current challenges – this is precisely where NTUT holds a unique advantage in the field of sustainability.

Looking ahead, NTUT will continue to leverage its strengths to deepen our commitment to social responsibility and sustainable development. The school is actively planning the construction of campus trails to foster a more environmentally friendly and welcoming green campus. At the same time, we are dedicated to cultivating young talents who possess a strong sense of social responsibility, cross-disciplinary collaboration skills, and innovative thinking. The school firmly believe that through continuous effort and practical action, NTUT will remain at the forefront of advancing social progress and sustainability, delivering meaningful change and lasting impact to society.

National Taipei University of Technology President
Hsi-Fu Wang

Annual Highlights

• Teaching Aspect

1. A themed integrated curriculum was promoted. In the 2023 academic year, seven departments participated, including the Department of Interaction Design, Department of Information and Financial Management, Department of Cultural and Creative Industries Development, Department of Electronic Engineering, Department of Industrial Design, and Department of Mechanical Engineering – a total of seven departments. Altogether, 32 faculty members were involved, and the program was attended by students a total of 3,120 times. The themed curriculum integrates resources and instructors from industry and government. Participating organizations include well-known industry–government–academia collaborators such as Microsoft Taiwan, Provision Information, Lextar Electronics, Taiwan Design Research Institute, and Quanta Computer. Taking the Department of Interaction Design as an example, one student project titled “Ji-Fu Adventure” won the Gold Award at the 2024 Taiwan Digital Media Design Awards. The project transformed the literary work of Huang Chun-Ming into an interactive game, guiding players to experience life stories from 1950s Taiwan through gameplay.

2. A total of 264 modular courses on innovation and entrepreneurship have been planned. In 2024, the “AI Ready” team received a Phase II grant from the U-start Innovation and Entrepreneurship Program. The team focuses on applied research in artificial intelligence, particularly targeting innovations in smart healthcare and long-term care services. The team places great emphasis on collaboration and execution. To date, it has received 24 approved patents (with 8 more pending), won 89 awards in domestic and international competitions, published 80 international journal papers, and participated in 14 exhibitions, consistently achieving outstanding results across multiple fields.

3. The Ministry of Education announced the 148 selected items for the 2023 Classroom Practice Research Program, and four teachers from the NTUT received the award, making the program the first in Taiwan. The award-winning teachers include Professor Chen-Shu Wang of the Department of Information and Financial Management, Professor Hua-Yi Hsu of the Department of Mechanical Engineering, Associate Professor I-Jui Lee of the Department of Industrial Design, and Lecturer Hui-Wen Liu of the Foreign Language Center. Their excellence in teaching innovation has been highly recognized.

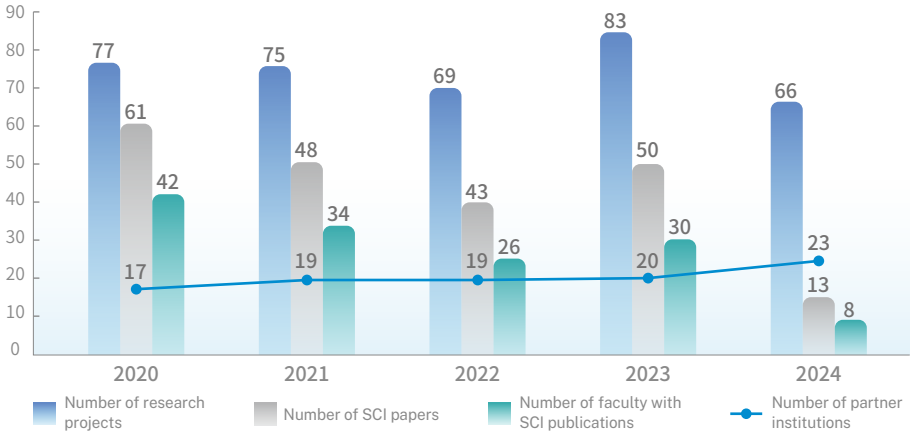
4. In 2024, a new Master’s Program in Semiconductor Technology was launched. The program is taught entirely in English, enrolling 30 domestic students and 10 international students. The curriculum covers fields such as materials processing, equipment and plant operations, and integrated circuit design, with the goal of cultivating professionals in semiconductor technology.

• Research Aspect

1. In the past three years, SDG-related papers have been continuously produced, with the highest number in the areas of “SDG7 Affordable and Clean Energy,” “SDG9 Industry, Innovation and Infrastructure,” and “SDG3 Good Health and Well-being,” fully integrating the university’s faculty research strengths to achieve sustainable research goals.

2. The average number of papers published per person over the past three years was 2.96 in 2022, 2.73 in 2023, and 2.55 in 2024. The number of approved NSTC (National Science and Technology Council) projects in the past three years was 282 in 2022, 235 in 2023, and 246 in 2024. The approved funding decreased slightly from NT$459 million in 2022 to NT$439 million in 2024. This accumulated research capacity lays a solid foundation for sustainable research.

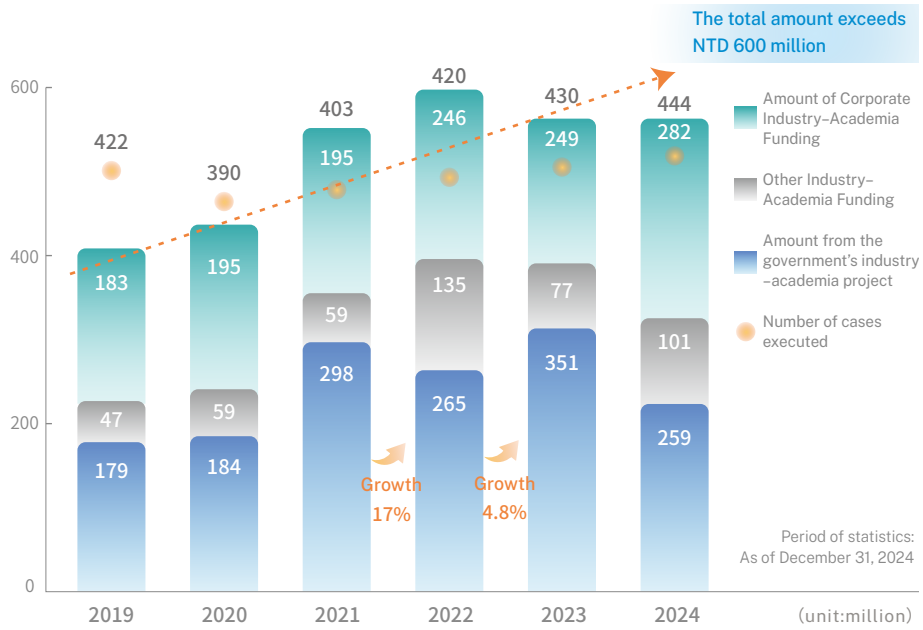
3. From 2020 to 2024, the statistics on inter-university academic cooperation projects are shown in the figure below. As of 2024, the number of cooperating institutions reached 23.



• Industry–academia collaboration

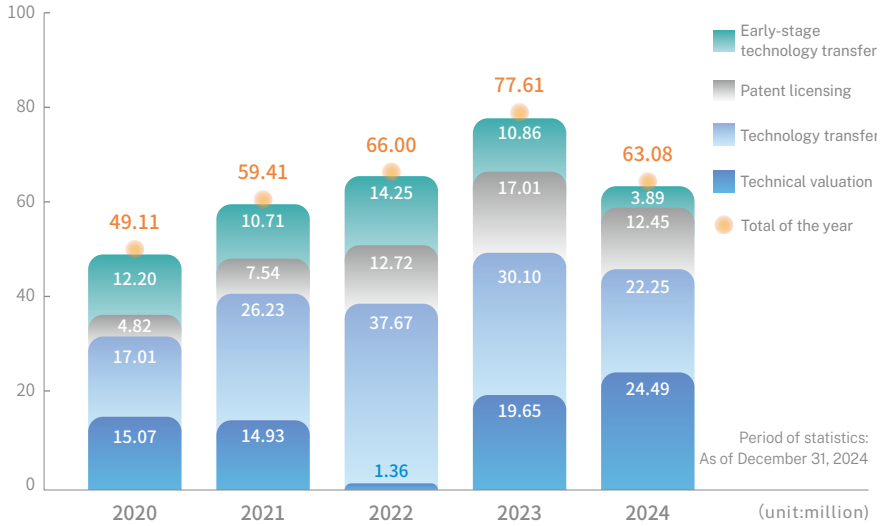
1. The school is positioned as a practice-oriented research and technology institution, with excellent results in faculty-led industry–academia R&D and patent technology transfer, demonstrating outstanding performance in industry–academia collaboration. In the past three years, the total amount of industry–academia collaboration has continued to grow, exceeding NT$600 million annually. Nearly 50% of the projects were with enterprises and legal entities. The University has collaborated with several international companies such as TSMC and Qualcomm, and co-established a research center with U.S.-based Sunbird, with a project value exceeding NT$10 million. Furthermore, a research team was jointly formed with the MIT City Science Lab, securing collaborative projects with TSMC, Hon Hai, and others, establishing the campus as a practical platform for international industry–academia R&D cooperation.

Amount of Contracts Signed for Industry–Academia Projects
(including multi-year projects; excluding subsidies from the National Science and Technology Council and the Ministry of Education)



2. In terms of patent and technology transfer, the University has earned an average of over NT$50 million annually in technology transfer fees and equity valuation over the past three years. Notably, in 2022, a faculty-led international technology transfer project with Meta (Facebook) was valued at US$300,000. Over the past three years, the University has supported faculty in applying for Value Creation and Tech Innovation (Seed and Breakthrough) programs, resulting in eight approved projects with total subsidies exceeding NT$50 million.

2020–2024 Patent Technology Transfer Paid-in Revenue Statistics



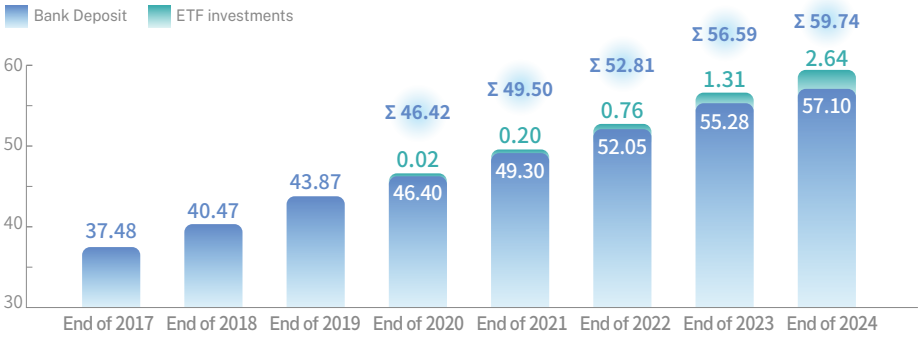
3. Upon enterprise onboarding, the University's Innovation Incubation Center provides free consulting services across different professional fields, tailored to the enterprise's developmental stage. The Center connects various channels to introduce diverse resources, creating a one-stop incubation and entrepreneurship ecosystem. Over the past five years, the Center has nurtured an average of 25 startups annually, maintaining a start-up guidance success rate of 75%. It has been repeatedly recognized by the Small and Medium Enterprise Administration, Ministry of Economic Affairs, as a "National Outstanding Incubation Center," and received the "2023 National Innovation Award – Sustainability Model Award."

• Financial aspect

1. The school's 2024 income and expenditure were NT$14,331,000, reaching the target of the school's operating fund.

2. The total expenditure of the school has continued to grow, reaching NT$4,584,129,000 in 2024. In addition to the income from government subsidies such as the Senior High School Deep Cultivation Program, the school is also committed to exploring financial sources and other external resources, so that the school's self-raising income can grow significantly. The self-raising income ratio has maintained over 60% of the total income of the school for many years, which not only enhances the school's teaching and research capacity, but also has a significant effect on industry–academia collaboration.

3. The capital of the school (including investment in ETF) increases steadily by about NT$300 million each year, reaching NT$5,973,760,000 by the end of 2024.



• Social Aspect

1. USR Wood Innovation at NTUT Partners with Taiwan Center in Turkey to Promote Wood Education for Refugee Children the NTUT "USR Wood Innovation Culture Deep-Rooting" project team, in collaboration with Ms. Hsiu-Yi Chen, a teacher at Taipei Xinsheng Elementary School, partnered for the first time with the "Taiwan–Reyhanli Centre for World Citizens" to design a wood education summer camp for Syrian refugee children 7,000 kilometers away in Turkey. The initiative aims to promote woodcraft education globally and support the holistic development of children.

2. Professor Yu Ping-Sheng of NTUT's Institute of Mineral Resources Engineering and his team continued the mission of the USR project "The Real Story of Fishing Villages – Wanli Yehliu Coastal Landscape Conservation and Fishing Culture Sustainability" by conducting weathering resistance research on the iconic "Queen's Head" rock formation in Yehliu. The team successfully developed a "Biomimetic Sandstone Reinforcement Technology" that effectively slows the natural weathering process of this unique geological feature. The team also applied their pumice research to explore its uses in organic fertilizers and energy-efficient construction materials. They also transformed Yehliu Elementary School's Fishing Culture Museum into a "Sustainable Ocean Culture Education and Experience Center," advancing cultural preservation and local economic development.

3. The internal USR Seed Project, 'Technology Assistive Devices and Specialized Teaching Materials Designed for the Visually Impaired,' received the Merit Award in the Inclusive Wellbeing category of the 6th Commonwealth Magazine USR University Social Responsibility Awards in 2025. By establishing long-term collaborative partnerships with organizations serving the visually impaired, the project promotes and improves smart cane designs and offers courses to disseminate their use, directly addressing the needs of the visually impaired community.

4. In terms of social development, the school has organized several activities for students with special education, including inviting vocational students to visit the school to learn about the knowledge related to special education and promoting the knowledge and activities of special education. At the same time, we have also provided information on special education to help more people understand and support the needs of students in special education. These activities not only help promote the public's understanding of special education, but also further expand the social resources for special education.

• Governance Aspect

1. In terms of global university rankings, the University has made it into the QS World Top 500 for six consecutive years, reaching 420th place in 2026 and ranking 6th among all universities in Taiwan–achieving its best performance ever. Among Taiwanese universities in the QS Top 500, the University is the only one to have shown steady progress for eight consecutive years.

2. In the 2025 “Cheers” survey on most favored university graduates by enterprises, NTUT secured 1st place in the technical and vocational category.

3. In 2024, the institution received the Excellence Award and the Gold Award for Sustainability Reporting from the Taiwan University Sustainability Awards (TUSA) in the Comprehensive Performance Category, extending its impact in teaching, research, and brand influence through rich and diverse academic capabilities.

4. In 2025, the institution received the Model Award in the Sustainability Report Category at the 6th Global Views University Social Responsibility (USR) Awards.

5. In 2024, the University signed the University Sustainable Development Initiative with the Taiwan Institute for Sustainable Energy, jointly promoting environmental sustainability.

6. In 2024, the University joined the Global Views ESG Alliance, uniting the strengths of academia and industry to amplify impact, and nurturing more cross-disciplinary, diverse, and innovative talent to develop the University into a more sustainable institution.

• Environmental aspect

1. The University upholds the vision of a “Borderless University” and a “Sustainable University,” creating an ecological campus. From 2020 to 2024, it has ranked No. 1 globally in the “High-Rise University” category of the UI GreenMetric World University Ranking.

2. NTUT officially unveiled the “Campus History and Arts Park,” featuring the restoration of “Yi Da Chuan Hall” – the first reinforced concrete building on a Taiwanese campus. Centered around this historic structure, the park is designed as a history museum and cultural exhibition space, blending tangible architecture with intangible cultural heritage. It reflects NTUT’s pursuit not only of innovation in technology, but also of a humanistic spirit that revitalizes historical buildings into meaningful assets for sustainable education.

3. In 2024, NTUT improved the electrical systems of the First, Second, and Fourth Teaching Buildings, along with the Chemistry Building. By replacing old transformers and recalculating load capacities, the upgrades reduce annual electricity consumption by approximately 100,000 kWh. The adoption of amorphous iron-core transformers further minimizes energy loss and lowers greenhouse gas emissions.

4. NTUT signed a Letter of Intent for the “Tea Offering Action – Zero-Waste Water Campus Plan,” promoting a shift from purchasing bottled water to using personal water bottles, aiming to reduce PET bottle waste. This initiative engages faculty, staff, and students in efforts to reduce plastic usage and carbon emissions, reinforcing the university’s commitment to a sustainable campus. From mid-November to the end of 2024, smart meters recorded a reduction of 4,873.8 plastic bottles and 745.6 kg in carbon emissions.

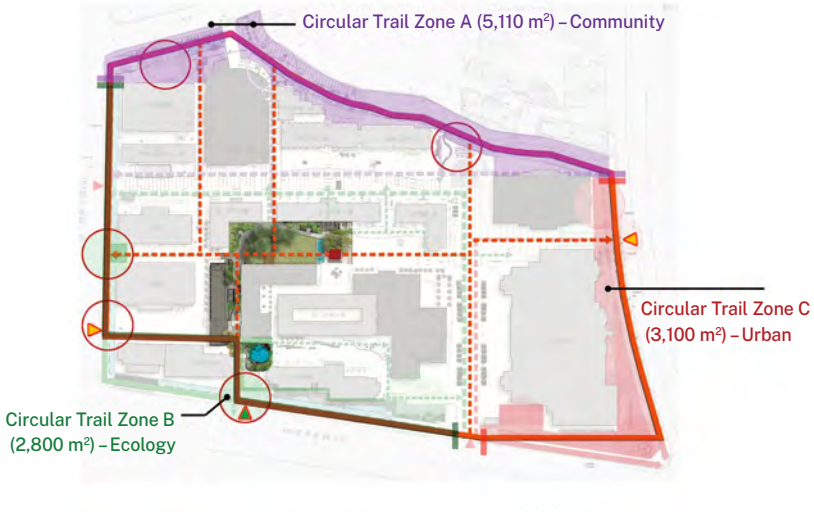
NTUT Major Developments

• Campus Perimeter Trail Renovation Project

To further develop an open campus, strengthen integration with nearby communities, and provide a leisure environment for students, faculty, and the public to walk or relax, NTUT plans to renovate and connect its perimeter trail.

The overall project focuses on removing old walls, obstacles, and abandoned facilities, cleaning up corner areas and enhancing landscaping, constructing a barrier-free environment, and restoring ecological waterways. Based on environmental characteristics, planning and design will be carried out separately for the North Zone (Student Activity Center to Guanghua Hall, referred to as the Bade Section), Southeast Zone (Guanghua Hall to Zhongxiao Gate, referred to as the Xinsheng-Zhongxiao Section), and Southwest Zone (Zhongxiao Gate to Guanghua Hall, referred to as the Zhongxiao–Jianguo Section).

The full project is scheduled to begin improvement works in August 2025, with the aim of increasing recreational space, enhancing landscape environments, and improving space utilization, thereby achieving the goal of shared growth between the university and the community.



• NTUT Promotes Jianbei Campus Development

Since its founding, NTUT has emphasized applying what is learned and built close relationships with nearby industries. In the past, Jianguo Brewery, Taipei Distillery (now Huashan Cultural and Creative Park), and Songshan Tobacco Factory – all located along the Taipei railway corridor – were key places for student visits, internships, and graduate career development.

During the era of Taipei Institute of Technology, NTUT cooperated with the government to promote cooperative education, training technical talent for state-owned enterprises such as TTL, Taipower, Taiwan Alkali, and Taiwan Railways. From the 1950s, special classes were opened in partnership with the Tobacco and Alcohol Monopoly Bureau. In 1971, the Cooperative Education Center was established to continuously cultivate professional technical personnel to meet Taiwan's industrial development needs.

NTUT hopes to work with all sectors to preserve and revitalize the public lands of Jianbei's industrial heritage, promoting cultural transmission and innovative application. Through the concept of a university town, it aims to drive community development. The university has extensive experience in preserving cultural assets, strictly complies with the Cultural Heritage Preservation Act, and implements the reuse of heritage sites. It has already restored on-campus designated monuments such as the Red House and Yi Da Chuan Hall. In November 2024, the restoration of Yi Da Chuan Hall was completed, and it was set up as a school history memorial exhibition hall, forming the "Campus History and Arts Park," integrating tangible architectural space with intangible historical culture. This demonstrates that NTUT is not only committed to innovation in science and technology but also places the humanities at its core, continuing NTUT's spirit of "Integrity, Simplicity, Diligence, and Perseverance," and showing the university's responsibility in cultural heritage preservation and its efforts in carrying on campus traditions. Regarding the Jianbei heritage site, NTUT, bearing the mission of education, will uphold the responsibility of safeguarding cultural heritage and maintaining historical legacy, fully complying with the Cultural Heritage Preservation Act and committing to the preservation and sustainable management of cultural assets. Future plans will not affect beer production at all. Instead, the heritage site is expected to be revitalized as an asset for educating future generations.

Accordingly, the "Taipei City Zhongshan District Urban Planning Amendment (Re-zoning Part of Industrial Area to University and Road Use)" was conditionally approved at the 1,065th meeting of the Urban Planning Committee, Ministry of the Interior, on October 22, 2024. The Taipei City Government Urban Development Bureau officially announced implementation on January 8, 2025, with the effective date starting at midnight on January 9, 2025. To promote the overall development of NTUT's Jianbei campus and the integrated benefits of the collaborative park with Taiwan Tobacco and Liquor Corporation, the university has, based on mutual prosperity and cooperation, promoted various development projects and officially established the "Jianbei Campus Development Promotion Committee" in 2025.

NTUT has faculty and students in departments such as architecture, industrial design, interactive design, and cultural business development. With the strong support of alumni, the university is committed to fulfilling its social responsibility and hopes that all sectors will join in supporting the revitalization of cultural assets, community integration, governmental reassurance, and sustainable education – for a four-win outcome.

01

Sustainable Management Practices

1-1 About NTUT

The university was established in the first year of the Republic of China and has witnessed a century of institutional transitions and industrial transformation in Taiwan. It has evolved through various stages – from the Industrial Training Institute and Industrial Vocational School to the Industrial Junior College, Technical College, and finally the University of Science and Technology – consistently serving as Taiwan's premier cradle for cultivating hands-on professionals and playing a pivotal role in driving the nation's economic development. Upholding the spirit of our motto, "Integrity, Simplicity, Diligence, and Perseverance," the university is dedicated to research in applied science and technology, with the mission of nurturing high-level professionals who embody academic excellence, moral integrity, and humanistic values – serving society and contributing to national development. Since its founding, NTUT's legacy of innovation and entrepreneurship has nurtured countless outstanding talents who have continually propelled Taiwan's economic and industrial progress. To date, over 140,000 alumni have made remarkable achievements across diverse fields. Notably, more than 10% of the top executives in Taiwan's listed and OTC companies are alumni of the university.

As a leader and role model in Taiwan's technical and vocational education, the university has taken the initiative in various educational endeavors. To expand its scale and resources, the Ministry of Education approved the establishment of the Taipei United University System (abbreviated as NTUS) in 2011. In recent years, in response to major national development strategies and evolving external environments, the university has undertaken organizational restructuring to meet operational demands. In 2021, the university established the Headquarters for Advanced Technology Research, focusing on energy, artificial intelligence, and semiconductors, to create a practice-oriented environment for talent cultivation and industry–academia R&D. In 2022, the College of Innovative and Advanced Technologies was launched to foster high-level technological professionals through master's and doctoral programs in Artificial Intelligence, Information Security, and Semiconductor Technology. Additionally, the Institutional Research and Sustainable Development Center was established to promote the university's sustainable development goals.

• Major Milestones in the University's Development

1912	Japanese Colonial Period	Established the Industrial Training Institute under the Civil Affairs Department of the Government-General of Taiwan, marking the origin of industrial education in Taiwan.
1945	Vocational School Period	Renamed as Taiwan Provincial Taipei Industrial Vocational School.
1948	Junior College Period	Upgraded to Taiwan Provincial Taipei Institute of Technology.
1994	Technical College Period	Reorganized as the National Taipei Institute of Technology.
1997	University of Science and Technology Period	Officially renamed as the National Taipei University of Technology (NTUT), and established four colleges: Mechanical & Electrical Engineering, Engineering, Design, and Management.
2021		In response to government policies encouraging innovation-driven industry–academia collaboration and talent cultivation in key national sectors, the Headquarters for Advanced Technology Research was established.
2022		• Integrated the Institutional Research (IR) Center and University Social Responsibility (USR) Office to form the Institutional Research and Sustainable Development Center. • Established the College of Innovative and Advanced Technologies in accordance with the Act for Industry–Academia Collaboration and Innovative Talent Development in National Key Fields.
2023		In alignment with national space technology development policies, the Graduate Institute of Space Systems Engineering was established.

• Study Philosophy

The university is positioned as a "practice-oriented research university with technical and vocational characteristics." Its philosophy is grounded in the school motto: "Honesty, Simplicity, Excellence, and Diligence." Under a school culture that values hard work and pragmatism, the educational objective is to cultivate professional talent and future corporate leaders who possess high moral character, core competencies, global perspectives, and a strong sense of social responsibility. Teaching emphasizes the development of hands-on practical skills, while research focuses on practical, industry-oriented topics, aiming to train students in key industrial technologies and achieve seamless alignment between academic instruction, research, and industry needs.

The university's administrative development is driven by the pursuit of practical science and technology, with the mission to cultivate highly qualified professionals equipped with academic knowledge, moral integrity, and humanistic literacy, thereby contributing to society and national development. The institution is dedicated to realizing the vision of becoming an internationally renowned, high-quality, practice-oriented research university with a distinctive technical and vocational identity. It promotes a spirit of practical application, places importance on social responsibility and international talent cultivation, expands applied research and industry–academia collaboration, narrows the gap between academic learning and practical application, and enhances international cooperation and exchange, striving to become a world-class university of technology that integrates humanities, technological innovation, theory, and practice. Mission:

- Cultivate professional talent with excellent quality and high moral standards.
- Cultivate future leaders who are caring about the future of society with a wide horizon.
- Strengthen industry–academia R&D collaboration and lay the foundation for cross-disciplinary empowerment.
- Innovative technology to fulfill social responsibility.

• Short, Mid- and Long-Term Development Plan Framework Diagram:

Vision

Move toward becoming an international, high-quality, practice-oriented research university with technical and vocational characteristics.

Mission

- Cultivate professional talents with high moral character and excellent quality.
- Cultivate future corporate leaders with broad perspectives and social concern.
- Strengthen industry–academia R&D cooperation and lay the foundation for interdisciplinary empowerment.
- Innovate technology for sustainable practice and fulfill the university's social responsibility.

Education goals

Cultivate professional talents and corporate leaders with high moral character, core competencies, international vision, and social care.

Develop students' fundamental literacy and core capabilities: Humanistic literacy and social care, communication and teamwork skills, professional practice and interdisciplinary integration, innovative leadership and problem-solving ability, international mobility and sustainable practice ability.

School development timetable

Short-term (2 years)

Leverage existing strengths, strive for and integrate major external projects and resources.

Mid-term (4 years)

Enhance the construction of campus software and hardware, develop key teaching and research features, reach academic excellence and apply technology in practice, and establish a leading model for technical and vocational education.

Long-term (8 years)

Move toward becoming a high-quality technology university on par with internationally renowned universities.

Dimension of sustainable development

- Sound university governance.
- Excellence in teaching, research, and innovation.
- Drive shared social prosperity.
- Sustainable ecological environment.

Main goals and Development strategies

A. Healthy and Smart Green Campus

1. Provide a comfortable learning environment.
2. Build a smart-controlled and high-quality campus.
3. Create a multifunctional and sustainable green campus.
4. Take inventory and revitalize space utilization.
5. Enhance quality of life and campus environment.

B. Diversified and Innovative Learning Environment

1. Strengthen curriculum integration to enhance students' interdisciplinary professional capabilities.
2. Enhance industry–academia collaboration, alumni resource utilization, and hardware upgrades.
3. Develop innovative teaching models and establish a student-centered learning environment.
4. Collaborate with diverse industries to cultivate high-quality, cross-disciplinary employable talent.
5. Enrich students' humanistic and artistic literacy and foster positive character traits.

C. Cradle for Holistic Development

1. Enrich students' diverse club experiences and service learning opportunities.
2. Strengthen alumni-industry professional connections and establish student role models.
3. Deepen moral education and promote a student-centered teaching philosophy.
4. Improve sports facility infrastructure and foster a culture of physical fitness among faculty and students.

D. Pragmatic Industry–Academia R&D

1. Develop a practice-oriented and globalized R&D strategy.
2. Strengthen mechanisms for inter-university and interdisciplinary research collaboration.
3. Build a platform linking industry, academia, and research; enhance technology transfer performance.
4. Enhance incentives and practical use of R&D achievements.

E. Deepened International Academic Exchange

1. Attract and retain outstanding international graduate students.
2. Establish a technical and vocational-oriented international exchange model.
3. Implement "glocalization" to increase international visibility.
4. Focus on substantial collaboration with benchmark universities.

F. Efficient and Friendly Administrative Team

1. Improve administrative efficiency and optimize service quality.
2. Establish diverse reward systems to enhance staff interaction and performance.
3. Strengthen cost control mechanisms and diversify financial resources.
4. Promote alumni engagement and feedback mechanisms.

• Organizational structure

The School's administration, academic units, and relevant committees are established in accordance with the vision and goals of the School's development plan, and the organizational charter of the School is established in accordance with Article 36 of the University Act. The process for establishing or adjusting administrative or academic units is described as follows:

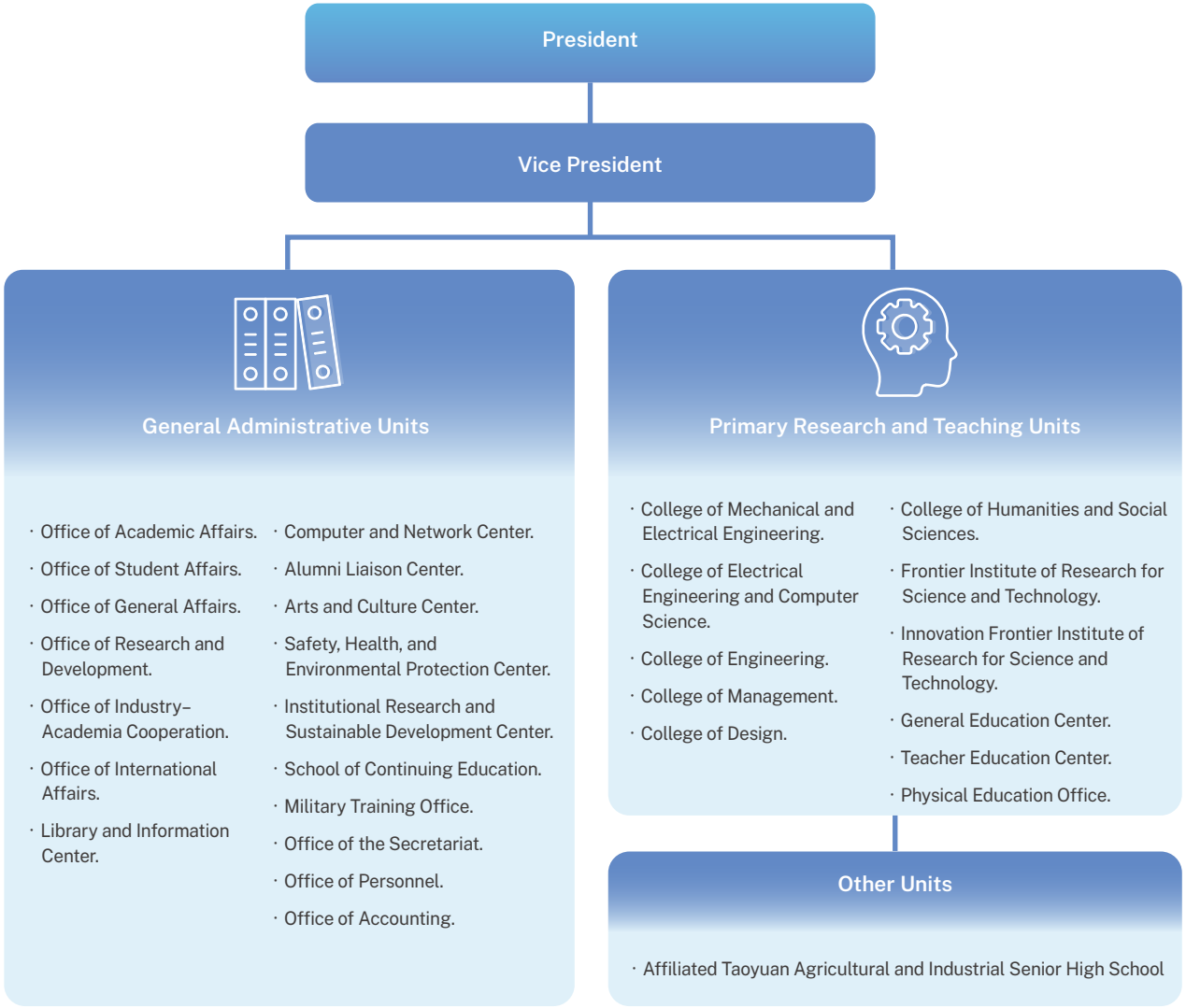
1. Establishment, adjustment, or merger of administrative units

The relevant administrative unit shall submit the proposal to the biweekly executive supervisors' meeting for review, followed by submission to the administrative meeting for consensus. Upon reaching consensus, the proposal shall be submitted to the School Development Committee and the University Council for deliberation. After approval, the Personnel Office shall report the amendment of the school's organizational regulations to the Ministry of Education.

2. Addition or adjustment of academic departments or programs

The proposal must first be approved by the relevant department and college-level meetings during the initial review. It is then submitted to the School Development Committee and the University Council for deliberation. Upon approval, the Office of Academic Affairs shall file the application within the timeline specified by the Ministry of Education. Once approved, the amendment of the organizational regulations will be proposed at the University Council. After approval, the Personnel Office shall report the amended organizational regulations to the Ministry of Education.

School Organization Chart:



• Institutional Data Office

Average Area of Campus and Student Space

The campus of the School is located in the main area of Taipei City, including: East Campus, West Campus, Pioneer International R&D Building and Hui Building, Linsen Campus, and the President's Dormitory. Other campuses are located in New Taipei City / Keelung City (Wanli Campus) and Taoyuan City (Taoyuan Campus), with a total area of 163.9 hectares, of which 9.6 hectares are usable land in the main Taipei campus. The School provides self-owned student dormitories, including East Dormitory Buildings 1 and 2, as well as two off-campus leased dormitories: New Taipei Dormitory and Nangang Dormitory, for a total of four dormitory buildings.

Total area of campus	163.9 hectares
Average campus area per student	0.012 hectares
Total area of dormitory	24.8 hectares
Average building area per student	0.002 hectares
Usable area of Taipei campus	9.6 hectares

Teacher-to-Student Ratio

Category	2023
Overall student-teacher ratio (should be ≦27)	26.43
Day school student-teacher ratio(should be ≦23)	22.68
Graduate student-teacher ratio (should be ≦10)	9.45

Number of teaching staff

Total number of teaching and staff in 2024: 1,612, with men to women ratio of

*Statistics of personnel data as of 2024/12/31.

Employees	Full-time faculty	Part-time faculty	Regular administrative staff	Contract staff	Part-time employees (non-student labor hires)	Military training officers	Stationed in the police station	Janitors and technicians
Men	390	278	40	211	3	6	2	24
Women	100	93	90	353	5	1	0	16
Total	490	371	130	564	8	7	2	40

Number of students

Total number of students: 13,493 in 2024

Number of male students			Number of female students			Male-female ratio of students	
Day School	7,688	Total: 9,553	Day School	3,270	Total: 3,940	Day School	2.35 : 1
School of Continuing Education	1,865		School of Continuing Education	670		School of Continuing Education	2.78 : 1

Note: The number of students in the Day School refers to those who completed registration and remained enrolled in the first semester of 2024, excluding students who have deferred or withdrawn.

The Continuing Education Division includes students from two-year, four-year, and on-the-job master's programs (including the EMBA program).

Graduate Flow Survey (%)

The 2024 survey tracked the status of graduates from Academic Year 2022 (one year after graduation). The employment rate for that year was 97.31%.

Category	Continuing Education	Employment	Military Service	Examinations	Unemployed / Others
2024	24.32%	69.68%	0.40%	3.66%	1.94%

1-2 Sustainable Development Blueprint and Management

• Management Approach

School Administration Governance and Sustainable Operation			
Policies/ Commitments	Leverage technical and vocational strengths, integrate sustainability topics to deepen education and campus development, actively seek resources and listen to stakeholder feedback, promote a green campus, cultivate professional talent with global perspectives, enhance sustainability influence, and create positive value for society and the environment.		
Responsible Unit	Institutional Research and Sustainable Development Center.		
	Goals and Actions		**Evaluation Mechanism**
Short-term (2 years)	1. Regularly conduct stakeholder questionnaires, ESG impact surveys, and materiality analysis to align with sustainability trends. 2. Formulate the blueprint and strategic planning of the sustainable development of the campus based on the long-term and mid-term development of the campus. 3. Integrate domestic and international sustainability issues and relevant indicators, and adjust the University's sustainability topics on a rolling basis.		• Sustainability Quarterly Meetings. • Materiality Analysis.
Mid-term (4 years)	1. Plan the net-zero roadmap and develop carbon-reduction strategies. 2. Participate in the sustainability expo to demonstrate sustainability achievements and expand social influence. 3. Conduct sustainability-related empowerment courses and education and training for teaching and staff.		• Sustainability Quarterly Meetings. • Check important tasks. • Sustainability Knowledge Survey Questionnaire.
Long-term (8 years)	Annually analyze external evaluation submissions and adjust sustainability strategy accordingly.		• International Rankings.
Corresponding Standards	GRI	• General Disclosures 2021	
	SDGs		
	STARS	• PRE-1 Executive Letter • PRE-3 Institutional Boundary • PRE-4 Operational Characteristics • PRE-5 Academics and Demographics	• PA-1 Sustainability Coordination • PA-2 Sustainability Planning • PA-3 Inclusive and Participatory Governance

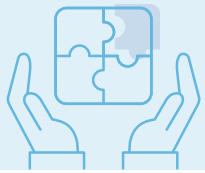
• Sustainable Vision and Goals of NTUT

The Path of Integrity and Continuity: The Next Century

NTUT inherits its school motto “Honesty, Simplicity, Precision, and Diligence,” with “Honesty” at its core, embodying the spirit of keeping promises. This highlights the University’s strong commitment to sustainable development and extends the concept of “Cheng-Xu” (a compound of “honesty” and “sustainability”), symbolizing its vision for sustainability to carry into the next century. Upholding the development focus of “Innovative Technology, Sustainable Practice,” NTUT leverages its robust academic resources, hands-on experience, and industrial influence to actively promote green transformation and accelerate sustainable progress. The University aims to achieve net-zero emissions by 2048, creating a future where technology and sustainability thrive in harmony for both present and future generations.

As institutions of education and talent cultivation, universities also serve as think tanks for society. NTUT embraces this role by actively responding to global climate change and sustainability challenges, exerting its influence as an advocate, leader, and practitioner of sustainable development. NTUT integrates the ESG (Environmental, Social, and Governance) spirit into campus governance and focuses on four main pillars: “Sound Campus Governance,” “Excellence in Teaching and Research Innovation,” “Driving Social Co-Prosperity,” and “Sustainable Ecosystems.” These efforts are encapsulated in the core concept of “Cheng-Xu,” summarized as City Sustainability(城續), Heritage Sustainability(承續), and Achievement Sustainability(成續)－comprehensively addressing and advancing the mission of sustainable development.

Blueprint of the Sustainable Development of NTUT:

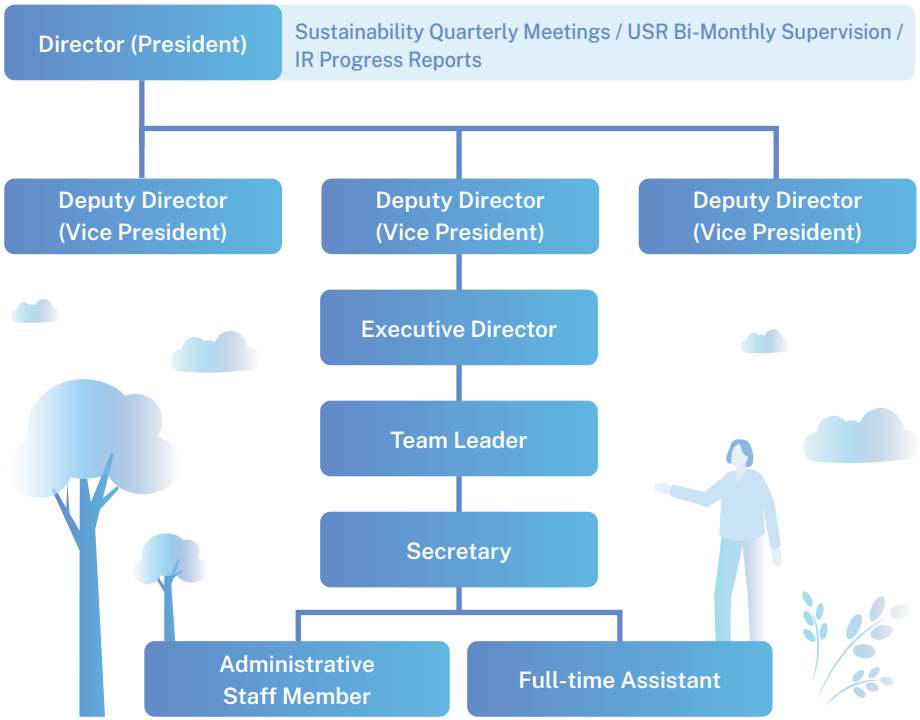
Sustainable Vision	The Path of Integrity and Continuity: The Next Century		
Sustainability Goals	Short-term (2years) Road to sustainability Demonstrate technical and vocational strengths, strive for resources, and incorporate stakeholder input; embed sustainability deeply into campus culture and curriculum design to lay a strong foundation for future sustainable development.	Mid-term (4years) Implementing Sustainable Learning and Practice Foster green-collar educators and students; enable academic excellence and practical technology applications to establish a leadership model in technical and vocational education that promotes positive change in society and the environment.	Long-term (8years) Sustainable Campus Culture Become an internationally recognized sustainable university and set an exemplary model in vocational education and sustainable development.
The Way to Continue a City	City Sustainability	Heritage Sustainability	Achievement Sustainability
Sustainability Dimension	Sustainable Ecological Campus 	· Excellence in teaching, research, and innovation · Drive shared social prosperity 	Sound university governance 

		Goals and Commitments	Responding to SDGs	Strategy	School Affairs Development Main goals
City Sustainability	Sustainable Ecological Environment	Apply key expertise in environmental engineering, energy, and green architecture to build an "ecological campus." Implement energy-saving and carbon-reduction strategies, develop renewable energy, effectively manage waste and recycling, and enforce a safe, eco-friendly, and humane procurement policy – aiming to become a model university in environmental and ecological sustainability.		• Maintain campus biodiversity and campus ecosystem; strive for healthy and green buildings. • Promote carbon inventory, implement energy management, formulate net-zero carbon-reduction strategies, and increase the use of renewable energy. • Implement green procurement, water resources, and waste management policies to reduce waste and environmental pollution.	• Healthy and intelligent green campus
Heritage Sustainability	Excellence in Education and Research Innovation	The university is committed to cultivating academic expertise across disciplines and applying practical scientific and technological solutions to address social issues and challenges. It actively promotes the alignment of teaching and research with sustainable development goals, fosters a diverse and innovative learning environment, strengthens industry–academia collaboration to bridge the gap between learning and practice, and nurtures high-level professionals who demonstrate academic excellence, integrity, humanistic values, and sustainability competencies.		• Incorporating the Sustainable Development Goals (SDGs) into academic research and teaching environments. • Fostering abilities in social responsibility, professional practice, and interdisciplinary collaboration. • Enhancing teaching innovation focused on cultivating key career competencies, and developing industry-ready talent with practical skills for societal advancement.	• Diversified and Innovative Learning Environment • Practice-Oriented Industry–Academia R&D
	Driving Shared Social Prosperity	The university leverages its influence in both society and the business sector by applying academic knowledge to support industrial development and local engagement. Through initiatives that promote industrial upgrading and transformation, as well as cultural preservation and innovation, the university aims to help build resilient communities capable of adaptation and recovery across urban and rural areas. By encouraging participation from within the campus to the broader community, the university promotes mutual benefit and shared prosperity between academia and local regions.		• Connect industry–academia cooperation with the school's strengths to meet the sustainable development needs of the nation, industry, and society. • Support faculty and students in participating in social practice activities and applying their core expertise to help develop their own sustainable management capabilities. • Deepen partnerships with international benchmark universities and corporate institutions to foster sustainability-related exchanges and cooperation.	• A cradle for holistic development • International exchange rooted in academic research • Pragmatic industry–academia R&D
Achievement Sustainability	Sound School Governance	Integrate sustainable development concepts into school governance, attract and cultivate top international talent, enhance administrative efficiency and service quality, build a diverse and inclusive campus environment, uphold solid and stable financial discipline, and align with both domestic and international sustainability standards and rankings to achieve sustainable campus operations and management.		• The entire university governance is focused on domestic and international sustainability issues, formulating sustainability policies and action plans. • Ensure fair treatment of all faculty, staff, and students; promote health and well-being; implement gender equality and reduce inequalities; enhance the inclusive and equitable nature of higher education; and foster a safe and supportive working and learning environment. • Improve sustainability-related investment and financial information disclosure, and establish an effective communication platform.	• Efficient and Friendly Administrative Team • Deep-rooted International Exchange in Research and Learning • Healthy and Intelligent Green Campus

• Institutional Research and Sustainable Development Center

Established in 2022, the “Institutional Research and Sustainable Development Center” aims to deeply understand the current status of university operations, promote institutional research, and systematically integrate and analyze diverse campus data to support administrative decision-making. The Center is committed to consolidating on-campus social responsibility strategies and measures, comprehensively advancing the sustainable development of school affairs, and cultivating a campus environment founded on sustainability principles.

Organizational Structure of the School Affairs Sustainability Center:



Institutional Research (IR)

Responsible for data analysis strategy proposals and report writing on institutional research-related topics, optimization of school administrative databases, data collection, mining and organization, serving as the liaison for the University Student Basic Information Database, and conducting audits for the Technical and Vocational Education School Affairs Basic Database.

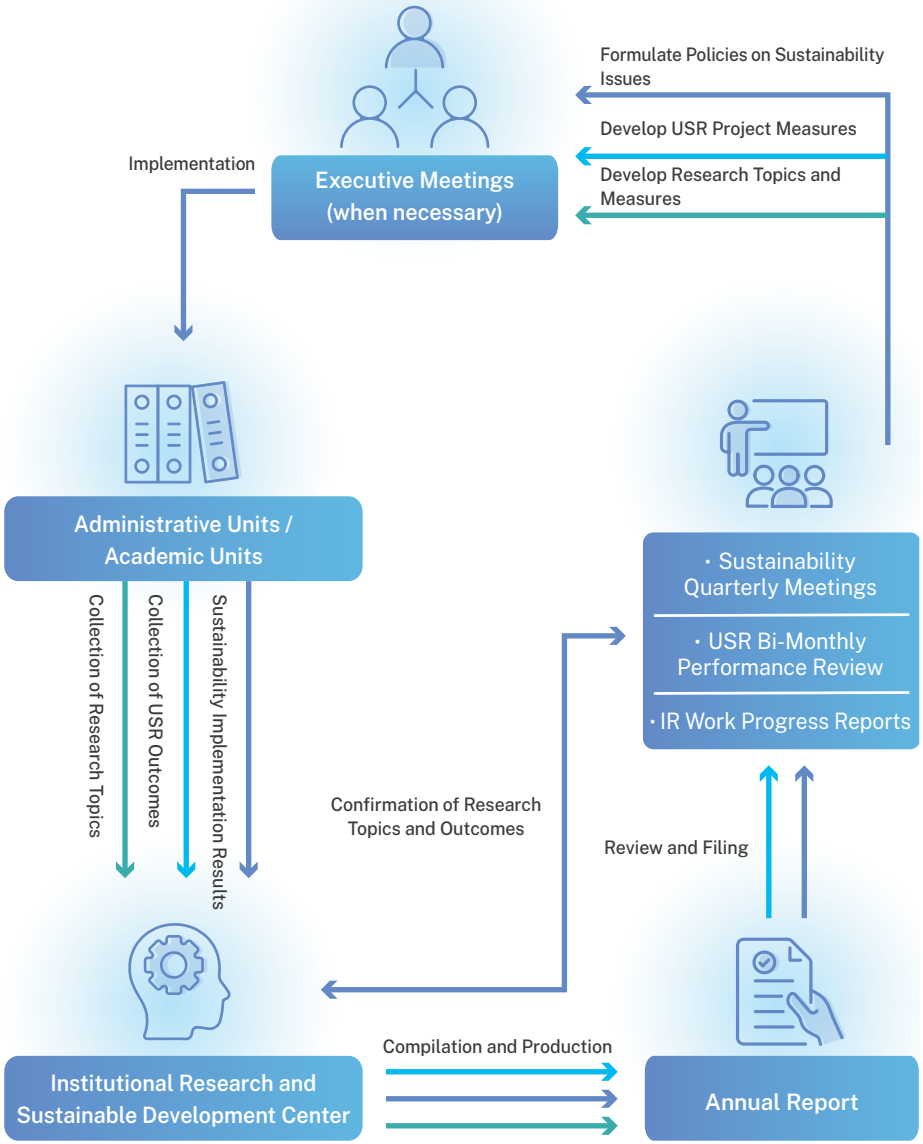
University Social Responsibility (USR)

Oversees and promotes the University Social Responsibility (USR) practice projects, fosters a core team of USR seed faculty, formulates and advances supportive institutional strategies, publishes the USR annual report, and is responsible for medium- and long-term performance evaluations of the USR initiatives.

Sustainable Development (ESG & SDGs)

Manages and promotes campus sustainability governance; draws on domestic and international sustainability trends and indicators to develop strategic action plans; publishes the annual Sustainability Report; conducts greenhouse gas inventories; and actively participates in sustainability-related rankings and reporting both locally and globally.

Supervision Process of the Institutional Research and Sustainability Development Center:



• Sustainability Governance Process, NTUT

To ensure the effective implementation of sustainable development goals, NTUT adopts the PDCA (Plan-Do-Check-Act) model to promote sustainability-related initiatives. By referencing both domestic and international sustainability trends, NTUT identifies material sustainability topics, plans and implements action strategies, and conducts quarterly "Sustainability Meetings" chaired by the President to review and adjust strategic direction, ensuring robust governance. In addition, NTUT publishes an annual Sustainability Report and SDGs Report to serve as a foundation for future improvements. To further enhance governance, NTUT actively introduces sustainability-related courses and seminars, providing knowledge-based training for administrators and faculty to boost overall sustainability capacity.

P	Identification of Material Topics	Material topics are analyzed based on NTUT's mid-to-long-term development plans, technical and vocational strengths, and global sustainability benchmarks. Sustainability planning workshops are convened to define the scope of material topics.
D	Sustainability Planning Initiatives	Each unit formulates its own sustainability management principles and sets quantitative and qualitative objectives.
C	Periodic Monitoring and Sustainability Reporting	• Quarterly evaluations are conducted to monitor progress on sustainability action plans. • Annual Sustainability and SDG Reports review outcomes and provide the basis for continued refinement.
A	Continuous Improvement	NTUT continuously refines its sustainability achievements in alignment with global trends, ensuring balanced governance across environmental, social, and economic dimensions – thereby advancing sustainable university development.

1-3 Stakeholder Engagement

• Stakeholder identification

The NTUT refers to the five identification principles of the AA1000SES:2015 Stakeholder Engagement Standard (including dependence, responsibility, tension, influence, and diverse perspectives) to conduct stakeholder scoring. The head and colleagues of the School Affairs and Sustainability Center fill out the stakeholder identification questionnaire and identify nine stakeholder groups based on organizations or individuals that have direct or indirect contact with and influence on the school. The goal is to establish a complete communication channel to communicate and respond to the expectations and interests of stakeholders.

• Stakeholder Communication

Important Stakeholders	Relationship with NTUT	Communication method and frequency	Issues of concern	Information connection
 Student	Opportunities for education, learning, and development.	• Department-level communication – Anytime • Mentor hours – Irregular • Administrative meetings – 7–8 times/semester • School affairs meetings – 1–2 times/semester • Student representative assemblies – Once/semester • Meet the President – Once/Monthly • Various surveys – Irregular • Freshman orientation camp – Once/Annually • Teaching evaluation – Once/semester	• School Administration Governance and Sustainable Operation • Teaching quality & effectiveness • Energy Management • Partnerships & international exchange	• Website of the Student Affairs Office: https://osa.ntut.edu.tw/ • Website of the Academic Affairs Office: https://oaa.ntut.edu.tw/ • Fan page of the Academic Affairs Office: https://www.facebook.com/TaipeiTech.aca/ • School website: https://www.ntut.edu.tw/ • School fan page: https://www.facebook.com/taipeitech1912/?locale=zh_TW
 Parents of Students	Mutual trust and support help students achieve better learning outcomes.	• Department-level communication – Anytime • Admission briefings – Irregular • New student parent meetings – Once/Annually	• Teaching quality & effectiveness • Campus Safety and Health • Partnerships & international exchange	• Website of the Student Affairs Office: https://osa.ntut.edu.tw/ • Website of the Academic Affairs Office: https://oaa.ntut.edu.tw/ • Fan page of the Academic Affairs Office: https://www.facebook.com/TaipeiTech.aca/ • School website: https://www.ntut.edu.tw/ • School fan page: https://www.facebook.com/taipeitech1912/?locale=zh_TW
 Faculty & Staff	Provide students with knowledge, skills, and administrative support.	• Administrative meetings – 7–8 times/semester • Consensus meetings – 2 times/semester • School affairs meetings – 1–2 times/semester • Mentor meetings – Once/semester • Various committees – Irregular • End-of-term meetings – Once/semester • Mentor training workshops – Once/semester • Labor–management meetings – Once/Quarterly	• School Administration Governance and Sustainable Operation • Teaching quality & effectiveness • Energy Management • University Social Responsibility practice • Talent attraction & retention	• Website of the Secretariat: https://sec.ntut.edu.tw/ • Website of the Student Affairs Office: https://osa.ntut.edu.tw/ • Website of the HR Office: https://per.ntut.edu.tw/

Important Stakeholders	Relationship with NTUT	Communication method and frequency	Issues of concern	Information connection
 Alumni	Collaborate to enhance academic standards, teaching quality, social impact, and provide career opportunities.	• University newsletter – Once/Monthly • Regional alumni association events – Irregular • Departmental alumni events – Irregular • Alumni general assembly handover – Once/2 years • Graduate destination surveys –1, 3, and 5 years post-graduation	• School Administration Governance and Sustainable Operation • Teaching quality & effectiveness • Energy Management • Talent attraction & retention	• Website of the Alumni Services Office: https://alc.ntut.edu.tw/ • Website of the Alumni Center Fan Page: https://www.facebook.com/ntutalc6400 • School Newsletter: https://newsletter.ntut.edu.tw/ • School website: https://www.ntut.edu.tw/ • School fan page: https://www.facebook.com/taipeitech1912/?locale=zh_TW
 Government agencies	Promote the development of the education business and improve the level of social welfare.	• Official correspondence – Anytime • Project reports – According to required schedules • School website – Anytime • Institutional evaluations – Once/5 years • Department/program evaluations – Once/5 years • Certifications by professional bodies – Irregularly • Higher education data submissions – Twice/year	• Talent attraction & retention • Research and industry-academia collaboration • Energy Management • Teaching quality & effectiveness • Financial management	• University Affairs Information Database: https://hedb.moe.edu.tw/ • School Affairs Section: https://osausr.ntut.edu.tw/p/426-1001-92.php?Lang=zh-tw
 Enterprises	Improve teaching quality, expand educational scope, offer students more practical opportunities, and support career development.	• Industry–academia collaboration meetings – Irregularly • Employer satisfaction surveys – Once/year	• School Administration Governance and Sustainable Operation • Teaching, research, and campus environment • Ecological and Resilient Campus • University Social Responsibility practice • Talent attraction & retention	• Website of the Industry–Academia Collaboration Office:https://rndc.ntut.edu.tw/ • Website of R&D Office: https://rnd.ntut.edu.tw/
 Suppliers	Promote school teaching and management goals through the provision of various products and services	• School website – Anytime • Tender notices – Anytime • Government e-Procurement System – Anytime • Procurement departments – Anytime	• Supply chain management and procurement • Teaching, research, and campus environment • Climate change adaptation • Social services • Talent attraction & retention	• Website of the General Affairs Division: https://oga.ntut.edu.tw/ • Government e-Procurement Portal: https://web.pcc.gov.tw/pis/
 Community residents	Enhance the university's social impact and improve community life and cultural quality through collaboration.	• Events – Irregularly	• University Social Responsibility practice • Stakeholder Communication • Social services • Ethics and civic education	• School website: https://www.ntut.edu.tw/ • School fan page: https://www.facebook.com/taipeitech1912/?locale=zh_TW
 Media	Facilitates communication between the university and the public, enhancing the university's visibility and reputation.	• School website – Anytime • Press releases – Irregularly	• School Administration Governance and Sustainable Operation • Research and industry-academia collaboration • Climate change adaptation • University Social Responsibility and Practice • Campus Safety and Health	• School website: https://www.ntut.edu.tw/ • Media coverage webpage: https://news.ntut.edu.tw/p/403-1000-11-1.php?Lang=zh-tw

1-4 Materiality Analysis

NTUT refers to domestic and international sustainability trends and evaluation indicators, along with its mid-and long-term institutional development plan and the recommendations of external experts. Based on the four steps for identifying material topics from the GRI Standards 2021 edition, NTUT conducts a materiality analysis every two years. This aligns the university's operations with global sustainability trends and serves as the foundation for planning sustainability strategies and disclosing information in sustainability reports.

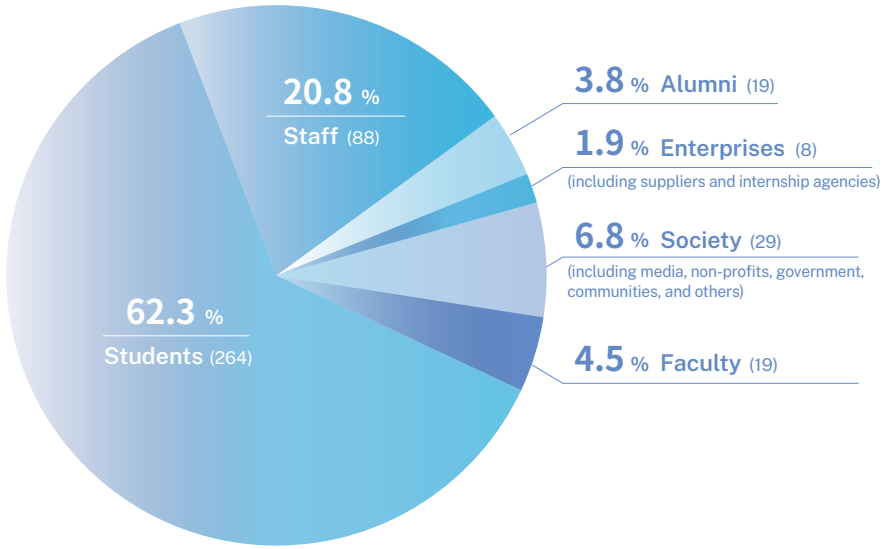
STEP 1 Understand the Organizational Context:

NTUT regularly refers to GRI Standards, SASB Standards, SDGs, and university sustainability ratings such as STARS, QS World University Rankings, and THE Impact Rankings. It also aligns with its mid- and long-term development plan and external expert recommendations. In 2024, teaching and research environments were included under teaching quality and effectiveness, and 22 sustainability issues were identified.

STEP 2 Identify Actual and Potential Impacts:

A. Level of Attention: Based on the AA1000SES standard, NTUT identified nine major stakeholder groups and distributed stakeholder questionnaires in 2024 to assess the level of attention paid to each issue. A total of 427 valid responses were collected.

B. Operational Impact:Questionnaires were completed by first-tier NTUT managers to assess the operational impact of sustainability issues. A total of 34 valid responses were collected.



STEP 3 Assess the Significance of the Impact:

Each issue was assessed for its severity, scope, possibility for remediation, and likelihood of occurrence. Significant positive and negative impacts were identified. Based on NTUT's characteristics, external impacts from environmental, economic, and social (including human rights) perspectives were integrated. Relevant business unit heads and colleagues completed ESG external impact surveys to evaluate how external issues influence the university's sustainability topics. A total of 27 valid responses were collected.

STEP 4 Prioritize the Most Significant Impacts for Reporting:

Results from Step 2 and Step 3 were analyzed alongside the average stakeholder concern level in the higher education sector. After internal discussions with department heads and experts, a materiality matrix was developed, and 10 key material topics were selected to guide data collection and disclosures for the report.

• List of sustainability issues:

Sustainability Issues			Level of stakeholder concern	Impact on operations	Impact of sustainable development
City Sustainability	Sustainable Ecological Campus	Climate change adaptation	★★	★	★★
		Waste management and reduction	★★★	★★★	★★
		Energy Management	★★★★★	★★★★★	★★
		Water Resource Management	★★★	★★★	★
		Ecological and Resilient Campus	★★★★	★★★★	★★
Heritage Sustainability	Drive shared social prosperity	Human Rights Protection and Diversity and Equality	★★★	★★	★
		University Social Responsibility practice	★★★★★	★★★★	★★
		Social services	★★★	★★★	★
		Partnerships & international exchange	★★★★	★★★	☆
		Arts and Cultural Promotion	★	★	☆
	Excellence in teaching, research, and innovation	Teaching quality & effectiveness	★★★★★	★★★★★	★★
		Ethics and civic education	★★★	★★	☆
		Student internship and employment	★	★	☆
		Academic Ethics	★★	★★	☆
		Research and industry-academia collaboration	★★★★	★★★	★

Sustainability Issues			Level of stakeholder concern	Impact on operations	Impact of sustainable development
Achievement Sustainability	Sound university governance	School Administration Governance and Sustainable Operation	★★★★★	★★★★★	★★★★★
		Stakeholder Communication	★★	★★	★★★
		Financial management	★★★★	★★★★	★
		Supply chain management and procurement	★	★	★
		Campus Safety and Health	★★★★	★★★	★
		Information and communication security and personal data protection	★★	★	☆
		Talent attraction & retention	★★★★★	★★★★	★★★

Note: ☆ represents value less than 1

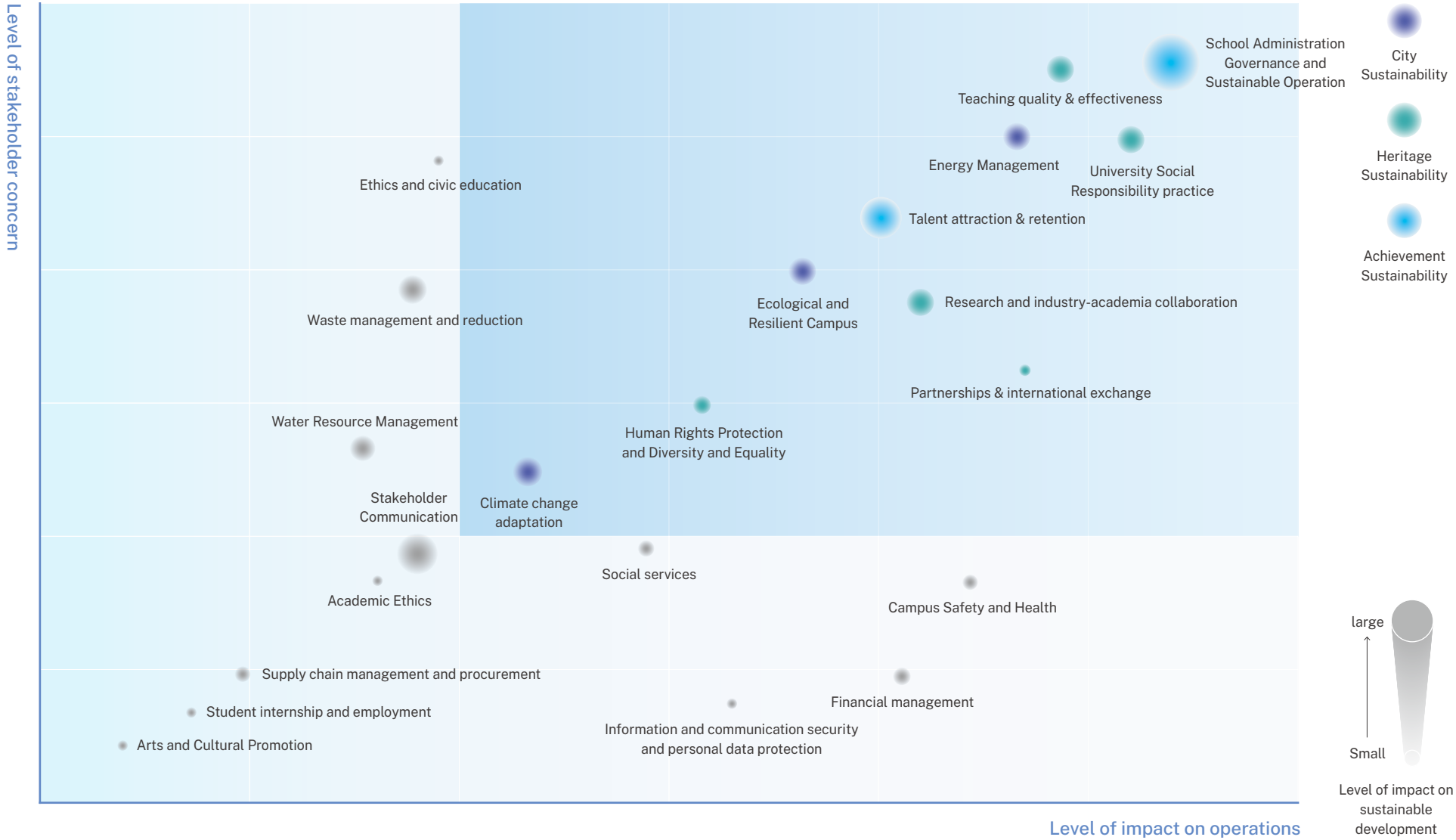
• List of Material topics:

Taipei Tech adopts the TSMC Dynamic & Double Materiality (TDDM) methodology, which integrates the AA1000SES:2015 standard for stakeholder concern. Through alignment with organizational strategy and sustainability context, it combines three dimensions—organizational operational impact, external ESG impact, and stakeholder concern—to prioritize ESG issues based on communication power, growth potential, and influence, ultimately determining the materiality matrix. Compared to 2023, the topic of "Ecological and Resilient Campus" has been newly added as a focus issue this year. Meanwhile, as the internship and employment system has become well-established and effective, it has been adjusted to a general topic, though it will still be included in the report for explanation.

● Direct impact ■ Indirect impact

Material topic		Green Campus	Diversified Learning	Nurturing Cradle	Industry–Academia R&D	International Exchange	Friendly Administration	GRI Topic-specific	Corresponding chapter and management policy
City Sustainability	Climate change adaptation	●			●	■		Economic Performance	1-5 Achieving Net-Zero Sustainability
	Energy Management	●			■		●	Energy Emissions	5-2 Energy Management
	Ecological and Resilient Campus	●					■	Biodiversity	5-1 Green Landscaping
Heritage Sustainability	Human Rights Protection and Diversity and Equality		■	■			●	Diversity and Equal Opportunity	3-1 Human Rights and Equality
	University Social Responsibility practice	■	●	●	■		■	Indirect Economic Impact Local Communities	6-1 USR for All
	Partnerships & international exchange		■	■		●		School-defined Indicators	6-4 International Exchange and Cooperation
	Teaching quality & effectiveness		●	●			■	School-defined Indicators	4-1 Sustainability Education
	Research and industry-academia collaboration		●		●	■		School-defined Indicators	4-1 Sustainability Research 4-3 Sustainable Technology
Achievement Sustainability	School Administration Governance and Sustainable Operation	●	■	■	■	■	●	General Disclosures 2021	1-2 Sustainability Blueprint and Management 2-1 School Governance 2-2 Risk Management and Internal Control
	Talent attraction & retention		■	■	■		●	Market position Employment and labor relations Training and Education	3-2 Talent Cultivation and Retention

• Materiality matrix:



1-5 Achieving Net-Zero Sustainability

• Management Approach

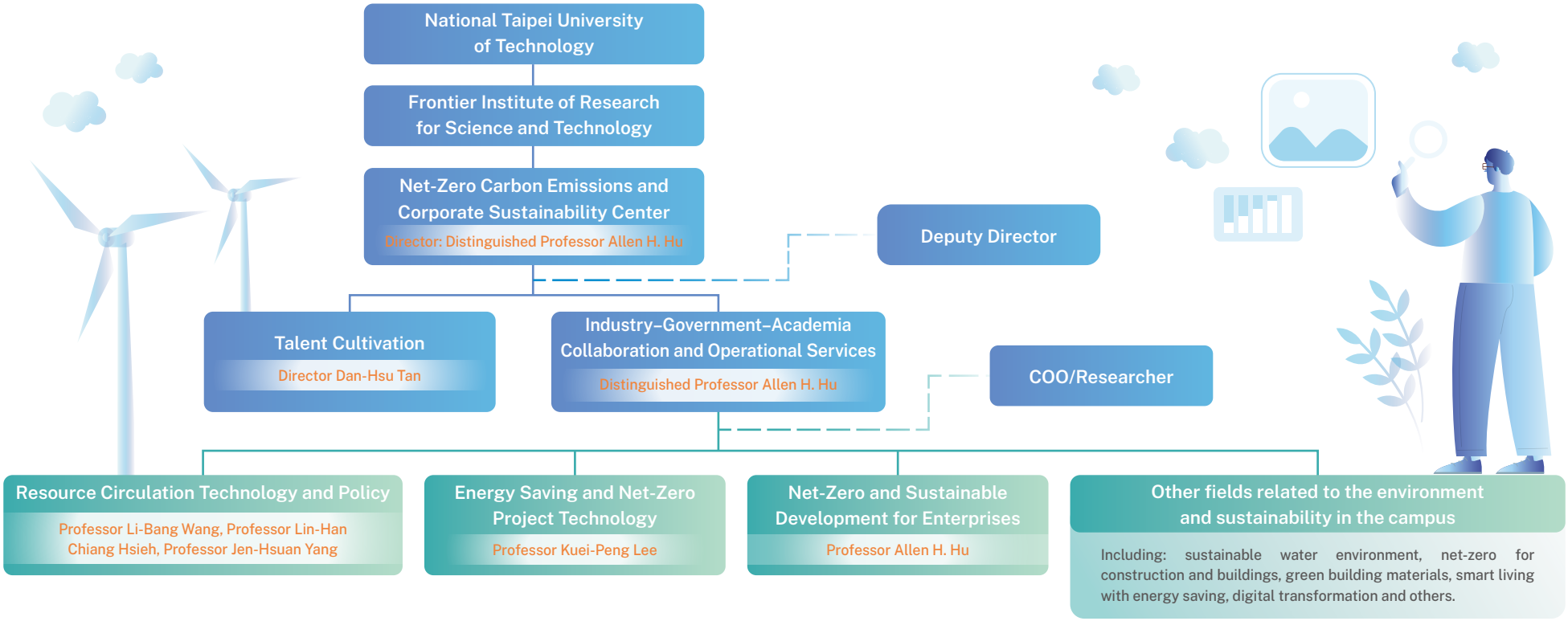
Climate change adaptation			
Policies/ Commitments	The university will reduce greenhouse gas emissions in accordance with international standards, promote carbon inventory and environmental education, and formulate carbon-reduction strategies. It is committed to achieving net-zero emissions by 2048, addressing climate change, enhancing environmental resilience, and encouraging participation from all faculty and students in sustainability initiatives.		
Responsible Unit	Campus Sustainability Center, R&D Division, Office of General Affairs, Military Training Office, Office of Personnel, Student Affairs Office, Environmental Safety and Health Center		
	Goals and Actions		**Evaluation Mechanism**
Short-term (2 years)	1. Replace energy-efficient equipment, promote carbon-reduction awareness, and encourage green transportation. 2. Promote carbon-reduction activities, establish a carbon inventory mechanism, and advocate low-carbon behaviors.	3. Regularly assess climate risks and propose response strategies. 4. Set up recycling stations, organize environmental activities, and implement project-based training programs.	• Sustainability Quarterly Meetings • EUI Value Monitoring System • Waste and recycling volumes
Mid-term (4 years)	1. Expand carbon-reduction facilities, promote low-carbon transport, and evaluate installation of EV charging stations. 2. Strengthen carbon emission data analysis, encourage participation of faculty and students in low-carbon lifestyles, and improve energy efficiency of facilities.	3. Launch sustainability courses and workshops to raise awareness of climate change among faculty and students. 4. Deepen environmental initiatives and community service; promote green office practices.	• Greenhouse Gas Emissions • Surveys • Course/workshop frequency • Volume of paper purchased
Long-term (8 years)	1. Optimize carbon-reduction strategies, promote remote work and teaching, and adjust school holidays to reduce energy usage. 2. Formulate a net-zero carbon action plan and collaborate with external units on carbon reduction and neutrality.	3. Strengthen industry–academia cooperation, integrate innovative technologies to enhance risk management in response to extreme climate events. 4. Collaborate with communities to implement environmental initiatives and promote sustainable green actions.	• Research Strategy Meetings • Relevant meetings • Event frequency
Corresponding Standards	GRI: GRI 201 Economic Performance		
	SDGs: 		
	STARS: • OP-1 Emissions Inventory and Disclosure • OP-2 Greenhouse Gas Emissions	• OP-14 Office Paper Purchasing • OP-15 Campus Fleet	• OP-16 Commute Modal Split • OP-17 Support for Sustainable Transportation • OP-18 Waste Minimization and Diversion

• Established the Net-Zero Carbon Emission and Corporate Sustainability Center

淨零碳排與企業永續中心

In June 2024, National Taipei University of Technology (NTUT) established the “Net-Zero Carbon Emission and Corporate Sustainability Center” to strengthen collaboration among industry, government, and academia. The center assists government agencies and enterprises in net-zero transformation, ESG sustainable development promotion, implementation of circular economy practices, and net-zero energy-saving evaluations, aiming to cultivate professional talent in corporate sustainability and net-zero carbon management.

- The center serves as NTUT’s platform for net-zero sustainable industry–academia collaboration. It accumulates R&D capabilities, promotes research results externally, and maximizes overall benefits through the practical application of research outcomes.
- The center also fulfills the role of a “think tank,” supporting domestic government bodies and enterprises in advancing net-zero policies and conducting sustainability assessments.

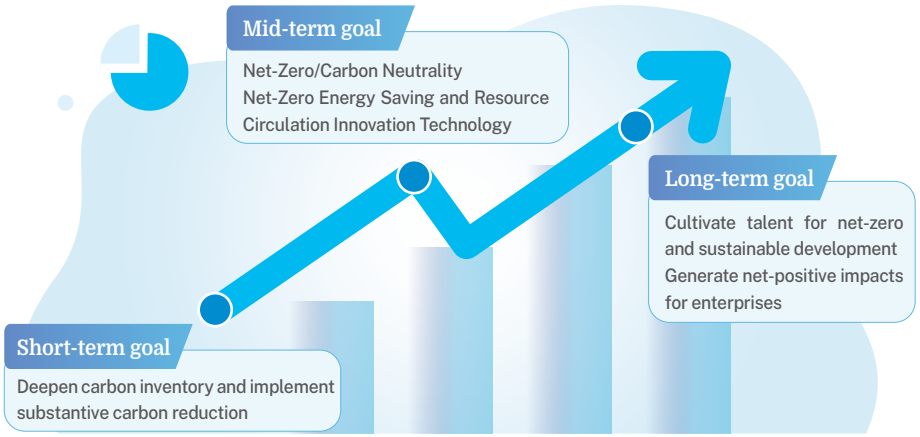


Center Features and Advantages

- Lab with Special Features: Provides technical solutions for corporate net-zero energy saving and resource recycling.
  1. The only university in Taiwan with a full-scale integrated development and testing platform for smart cooling and heat pump systems.
  2. Hydrothermal equipment for the removal of organic matter from sewage sludge and the synthesis of inorganic polymer materials for resource recovery.

- Low-Carbon Platform and Database: A suite of product life cycle assessment software and environmental data databases to assist enterprises in completing net-zero roadmaps and sustainability planning.

Future Outlook of the Center



• Climate Change Management

In 2022, NTUT introduced ISO 14064-1 to conduct self-assessments of greenhouse gas emissions, marking the University's first step toward achieving net-zero emissions. NTUT has actively incorporated sustainable development topics into the governance of campus sustainability. To address the operational risks posed by climate change, NTUT follows the Task Force on Climate-related Financial Disclosures (TCFD) framework, structuring its climate change response across four key dimensions: Governance, Strategy, Risk Management, and Metrics and Targets. By identifying climate-related risks and opportunities, the University aims to assess operational impacts and establish corresponding strategies and measures.

Research centers on climate change issues:

To integrate cross-disciplinary resources and enhance competitiveness in securing large-scale collaborative research projects, NTUT has enacted the "Regulations for the Establishment and Management of R&D Centers" and established a Management Committee. The committee holds annual meetings to evaluate the performance of each center, ensuring sustained operations and effective management.

University-Level R&D Centers	Research Center of Energy Conservation (RCEC) for New Generation of Residential, Commercial, and Industrial Sectors, Water Environment Research Center.
College-Level Research Centers	Energy Conservation and Emission Reduction Research Center, Energy-Saving Technology R&D Center for Residential, Commercial, and Transportation Sectors, Sustainable Environment Control Center, Energy Monitoring Research Center, Circular Environment Research Center, Sustainable Innovation and Assessment Center, Disaster Prevention Engineering Technology Center, Innovative Green Building Materials R&D and Promotion Center, Twin Transition and Sustainable Governance Center.

Core elements of TCFD:

Governance	The School Affairs Research and Sustainable Development Center holds the "Sustainability Meeting" every year and includes climate risk identification and assessment. After corresponding to the Material topics of the school and related sustainability indicators, action plans are formulated to implement climate action and sustainability goals.
Strategy	In order to achieve the goal of net-zero emissions by 2048, we analyze the risks and opportunities based on current operating conditions and use them to promote greenhouse gas inventory, renewable energy development, energy saving and carbon reduction, as well as green procurement practices, to mitigate and adapt to the risks and impacts of climate change.
Risk management	• Execute short-, medium-, and long-term climate-related risk and opportunity identification through cross-unit cooperation. • The survey questionnaire is used to assess the impact level and formulate response strategies.
Indicators and targets	The action plan is designed to align with sustainability-related indicators such as GRI and STARS, and with reference to evaluation standards. Qualitative and quantitative targets are set to serve as the basis for evaluating the effectiveness of implementation.

• Climate risk and opportunity management

Based on the Task Force on Climate-related Financial Disclosures (TCFD), the NTUT has identified seven major transition risks, three physical risks, and six climate-related opportunities through the disaster potential map of the Home Disaster Prevention and Protection Center, the climate change disaster risk adaptation platform, and the reference to the climate conditions of the education system. Then, the primary executives of the school further evaluated the likelihood and impact of the occurrence to identify the risks and opportunities of the financial impact of climate change and drew up a matrix of major climate change risks and opportunities.

Material climate change risk and opportunity matrix

Transition risk

T1. Increased energy costs
T2. Promotion of Net-Zero Emission Strategies
T3. Uncertainty of Low-Carbon Research and Technology
T4. Insufficient energy-saving equipment
T5. Impact on the school's image
T6. Knowledge Training
T7. Insufficient water

Physical risks

P1. Typhoon
P2. Floods
P3. Extreme high temperature

Opportunity

O1. Sustainability Research and Education
O2. Promote Low-Carbon Courses and Research
O3. Acquiring government low-carbon related projects
O4. High-efficiency Buildings
O5. Renewable energy technology
O6. Water Resource Management and Technology

Transitional risk:

Climate risk	Financial Impact	Response strategy
Rising costs of energy	1.High cost of green power 2.Higher temperature, higher electricity cost 3.High cost of renewable energy installation	• Promote energy conservation awareness and adopt energy conservation and carbon-reduction policies. Reduce total electricity consumption in the school through electricity consumption regulations and hold monthly meetings to investigate the school's electricity consumption. • Establish renewable energy such as solar panels to reduce energy expenditure from self-generated and self-use.
Promotion of Net-Zero Emission Strategy	In response to the net-zero carbon emissions, carbon tax, and carbon trading impacts of the Climate Change Response Act, inventory, carbon-reduction strategy planning, and purchase of green power certificates, etc., are conducted to increase operating costs.	• Promote campus carbon inventory and collect emission data for Scope 1, Scope 2, and Scope 3 (commuting) To set short-, medium-and long-term goals for net-zero carbon emissions. • Promote green procurement and use products with environmental protection and energy-saving labels. • New or modified buildings are subject to the Green Building Council (GBC) rating, such as EEWH Green Building Mark certification.
Uncertainty of Low-Carbon Research and Technology	Emerging technologies that increase the cost of teacher research.	• In response to the core expertise of the school in sustainable development and environmental climate, the school actively participates in government agencies and industry–academia collaboration in carbon-reduction-related projects and research to respond to the global net-zero carbon emission target.
Insufficient energy-saving equipment	The campus is limited, and the establishment of renewable energy is insufficient.	• Replace energy-intensive equipment (traditional lamps, inverter air conditioning, etc.), and purchase energy-saving and eco-friendly equipment. • Update smart meters and smart energy monitoring system equipment to implement campus energy management.
School image impact	Poor sustainability performance.	• Encourage academic research and social engagement in the field of sustainable development, and actively compete for external sustainable action awards to strengthen the competitiveness of school operations. • Participated in the "Smart and Climate-Friendly Campus Pilot Program" of the Ministry of Education to demonstrate the ecological campus's demonstration effect.
Knowledge training	In order to build up the knowledge of sustainability for all teaching and staff members and increase the cost of education and training.	• Increase the proportion of sustainability-oriented courses by promoting curriculum design centered on sustainability, along with expanding general education courses related to sustainable development. At the same time, relevant academic programs and micro-credentials are being developed to attract student participation. • Offer ESG and sustainability management-related advanced study courses to cultivate relevant talent in response to market demand.
Lack of water supply	Imbalances in the supply and demand of water resources lead to water shortages.	• Establish water consumption and water level monitoring systems to improve the water conservation plan for the entire campus. • Establish a rainwater harvesting system on the roof as a source of water for landscaping and gardening on the roof and flushing toilets. • Use of waterproof coating to achieve the goal of water retention.

Physical risks

Climate risk	Financial Impact	Response strategy
Typhoon	Because the sea temperature rises, the atmospheric water content increases significantly, resulting in an increase in the proportion of typhoons with stronger rainfall, resulting in higher damage.	• Implement disaster response plans and set up relevant disaster prevention facilities to ensure the safety of teaching and staff.
Floods	Changes in rainfall patterns, increasing urban water stress.	• With the campus fully paved with a waterproof foundation, we will continue to improve the campus's drainage and flood prevention capabilities, increase resilience to deal with extreme weather, and reduce the losses caused by climate change.
Extreme high temperature	Increased temperature and increased energy supply pressure.	• The school will strengthen the promotion of ecological campus, reduce the effect of thermal island effect of buildings through the increase in the percentage of ecological campus planning and planting, and improve the heat dissipation.

Opportunities:

Type of opportunity	Financial Impact	Response strategy
Sustainability Research and Education	Increase the competitiveness of campus sustainability performance, increase industry–academia collaboration, attract students to study, and increase operating revenue.	• The SDGs Thesis Award grants are provided to encourage the teaching and research staff of the school to publish high-quality international SDGs-related papers. • Add corresponding sustainability indicators to the course teaching outline.
Promote low-carbon courses and research	Research or R&D on low-carbon economy and green transformation.	
Acquiring government low-carbon related projects	Received government agency subsidies to implement energy conservation, environmental protection, or other low-carbon projects to realize a sustainable campus.	• Encourage teachers to apply for government-related research projects. • Plan the 2048 net-zero emission measures.
High-efficiency buildings	Low energy consumption, and reduce energy costs on campus.	• Replace the fluorescent lamps with LED lamps, and use smart streetlamps and other intelligent equipment to control energy consumption. • Periodically investigate the electricity consumption of the school, and regularly or irregularly check the electricity consumption status, and monitor and guide the dormitory with large electricity consumption.
Renewable energy technology	Lower energy costs, obtain government subsidies and tax incentives, and enhance school image and reputation.	• The new construction of the campus will plan the solar photovoltaic panels and other solar equipment. • Renewable energy research creates maximum effect for green power.
Water resource management and technology	Lower water consumption costs, lower drainage treatment costs, reduce environmental risks and responsibilities, and enhance school image and attractiveness.	• Establish a water resource monitoring system and optimize the rainwater harvesting system. • Create rainwater gardens, green rooftops, and water-pervious paving.

• Climate Change Research and Action Outcomes

Multipurpose smart rainwater garden:

The Water Environment Research Center supported the Climate Change Administration of the Ministry of Environment in establishing 16 multifunctional smart rainwater gardens across various counties and cities in Taiwan over the past four years. Through the implementation of an IoT-based real-time monitoring system, on-site data were collected and analyzed. During the monitoring period, these gardens demonstrated an average temperature reduction of 1.9°C and a total water retention volume of 31,752.61 m^3. To further promote the rainwater garden initiative, the Center evaluated the feasibility of integrating such systems into building sites or infrastructure projects. This included a review of relevant domestic regulations and consultations with experts from industry, government, and academia in the construction sector. On-site inspections and interviews were conducted to provide recommendations for continuous improvement. Additionally, three community engagement forums were held in northern, central, and southern Taiwan, incorporating Nature-based Solutions (NbS) and community-based perspectives. To support the broader adoption of rainwater gardens, the Center also assisted in organizing a campus teaching materials competition and compiled a reference manual for the design of rainwater garden facilities. These efforts aimed to facilitate future applications, raise public and campus awareness on rainwater gardens, climate change adaptation, and environmental education, thereby enhancing Taiwan's overall capacity to adapt to climate change.

Moisture-proof coating construction:

In addition to the ongoing long-term monitoring of the performance of permeable pavement at the Zhongxiao–Xinsheng intersection, the Water Environment Research Center collaborated with the New Construction Office of the Taipei City Public Works Department in 2024 on a sidewalk permeable pavement project along Zhongxiao East Road (from Jianguo to Fuxing section). Temperature monitoring equipment was installed at the Zhongxiao–Jianguo intersection to assess the effectiveness of permeable pavement in supporting urban climate change adaptation and mitigating the urban heat island effect.

02

Stable Governance of School Affairs

2-1 School Governance

The University, with a history spanning over a century, has cultivated countless core leaders for enterprises and laid the foundation for Taiwan's industrial development. Upholding the school motto of "Integrity, Humility, Intellect, and Fortitude," it remains committed to the research of practical science and technology, nurturing advanced professional talent with academic excellence, strong moral character, and humanistic literacy, in order to serve society and contribute to national development. The University operates with autonomy within the scope of the law.

• School administration decision-making

The University Council serves as the highest governance body, responsible for deciding major school affairs. The President chairs the council and oversees impact management responsibilities. The members of the council include the Vice President, first-level administrators of various administrative units, deans of each college, the Director of the Foresight Technology Research Headquarters, the principal of the affiliated school, faculty representatives, faculty association representatives, research personnel representatives, military training instructors, representatives of staff and teaching assistants, labor representatives, and student representatives. Faculty representatives are elected from each college, the General Education Center, the Teacher Education Center, and the Physical Education Office. One representative is elected for every twelve full-time lecturers and above, and in cases where the total is fewer than twelve, it is rounded up as twelve for the purpose of calculation. Among the faculty representatives, those holding the rank of professor or associate professor must account for no less than two-thirds, and the combined total of faculty representatives and faculty association representatives must comprise at least half of all council members. Representatives of research personnel, military instructors, staff and teaching assistants, and labor representatives are elected internally within their respective groups. Student representatives are elected according to procedures stipulated by the student self-governance organization and must account for no less than one-tenth of the total council membership. The council's composition spans a wide range of academic disciplines, including engineering, management, humanities, and design, and its members possess extensive academic and administrative experience. This meeting mechanism is designed to ensure transparency, inclusiveness, and responsiveness in the decision-making process, and to implement effective oversight in impact management. It ensures that all stakeholders are meaningfully involved, thereby enhancing the university's accountability and effectiveness in managing institutional impact.

• School Affairs Meeting

The School Affairs Meeting deliberates the following matters:

I. School development plans, budgets, and associated requirements.	V. Regulations for teaching evaluation.
II. Organizational regulations and other important rules and policies.	VI. Resolutions made by committees or task forces established under the School Affairs Meeting.
III. The establishment, modification, or termination of colleges, the Frontier Institute of Research for Science and Technology, major research centers, departments, institutes, divisions, and affiliated institutions.	VII. Regulations for the selection, reappointment, or acting appointment of the President.
IV. Academic affairs, student affairs, general administration, research, and other significant internal matters.	VIII. Proposals submitted to the meeting or raised by the President.

• Percentage of Representatives in School Affairs Meetings

Category	Administrators of administrative and academic units	Teacher representatives and Teacher Association representatives	Military training officers and staff	Student representatives
Number of students	28	45	7	9
Percentage	32%	50%	8%	10%

• Institutional evaluations

The University's self-evaluation is categorized into two types: "School Affairs Evaluation" and "Department/ Institute Evaluation," with the following planning details:

(I) Planning of Institutional evaluations

In accordance with the University's "Self-Evaluation Regulations" and the Ministry of Education's "Implementation Plan for the 2024 (Academic Year 113) Evaluation of Technological and Vocational Institutions," the University has actively promoted the self-evaluation of school operations. A School Affairs Evaluation Task Force was established, adopting the PDCA (Plan-Do-Check-Act) quality management model. Through this cyclic process, the implementation status of the four major aspects – School Governance and Development Strategy, Assurance and Support for Teaching Quality, Assurance and Enhancement of Student Learning Outcomes, and Self-Improvement and Advancement – is systematically evaluated and reviewed, with a pragmatic and sincere attitude to ensure effective internal self-assessment. Key Milestones:

- The last external evaluation by the Ministry of Education took place in Academic Year 2019. Following the announcement of the evaluation results in June 2020, a new cycle of self-evaluation planning was initiated by the end of that year. In June 2021, the "Self-Improvement Plan and Implementation Results" were submitted to the Taiwan Assessment and Evaluation Association (TWAEA) for record. According to the University's "School Affairs Evaluation Self-Improvement Timeline," annual reviews have been conducted, with four rolling updates completed between 2021 and 2024.
- In April 2023, the School Affairs Evaluation Task Force was re-established to oversee progress through regular meetings, review evaluation tasks, form an implementation team, confirm item-specific details, and coordinate the compilation and construction of evaluation data to ensure efficient information dissemination.
- On April 9, 2024, internal simulation drills of self-evaluation and mock site visits were conducted with senior administrators and experienced faculty members serving as evaluators.
- On June 4, 2024, an external mock evaluation was carried out by experts with academic and professional experience, who provided feedback on procedures and preparation requirements.
- On September 10, 2024, the University Self-Evaluation Advisory Committee convened, with experts in higher education evaluation offering consultation and guidance for evaluation-related matters.
- On December 6, 2024, the University is scheduled to undergo the on-site evaluation by the Ministry of Education, during which external committee members will conduct evaluations and provide recommendations.
- After the Ministry of Education's on-site evaluation is completed, a School Affairs Evaluation Review Meeting will be convened. Each unit will review feedback from evaluation committee members, respond to raised issues, and implement necessary improvements, thereby strengthening and refining the University's internal self-evaluation system.

(II) Planning of Department and Program Evaluation

According to the "Guidelines for the Establishment of the Self-Evaluation Committee and Task Force" of the University, each college dean serves as the convener to form a departmental self-evaluation task force. The task force is composed of the dean and the heads of the affiliated departments and programs, and is responsible for overseeing all self-evaluation-related affairs. It holds regular meetings to promote, coordinate, and track the progress of departmental self-evaluations.

To ensure objectivity and professionalism in the evaluation process, since the previous cycle in 2019 (Academic Year 2019), and in accordance with the University's "Self-Evaluation Regulations," external professional evaluation agencies have been commissioned based on the disciplinary characteristics of the departments. In 2019, 16 departments and programs from the College of Mechanical & Electrical Engineering, Electrical & Computer Engineering, and Engineering participated in the IEET (Institute of Engineering Education Taiwan) accreditation. Meanwhile, 11 non-engineering departments and the interdisciplinary Ph.D. program participated in the Higher Education Evaluation & Accreditation Council of Taiwan (HEEACT) Teaching and Learning Quality Assurance Program. Additionally, departments under the College of Management pursued accreditation from the Association to Advance Collegiate Schools of Business (AACSB). All of the aforementioned departments and programs received successful accreditation or evaluation results and obtained certificates from the respective professional evaluation bodies. Depending on the accrediting organization, the validity period of these certifications ranges between five and six years. As of now, all units evaluated in the 2019 cycle remain within their valid accreditation/evaluation period.

Accordingly, the planning and scheduling for the new evaluation cycle were discussed in internal meetings in 2023 and submitted to the Self-Evaluation Steering Committee for deliberation on June 8, 2023. It was resolved that the departments and programs would continue to undergo external quality assurance conducted by accredited professional evaluation bodies – both domestic and international – according to the validity periods of their previous certifications. This approach aims to enhance self-improvement, uphold teaching quality, and validate the University's development through the impartial and professional lens of third-party evaluations. The type and important handling schedule of the new cycle of the evaluation of the Institute of Science and Technology are as follows:

- Higher Education Evaluation and Accreditation Council of Taiwan (HEEACT) – Quality Assurance Recognition Program: A total of 9 units from non-engineering departments (including the Integrated Doctoral Program) and the Department of Smart Automation Engineering submitted applications for quality assurance recognition on December 27, 2023. HEEACT officially acknowledged receipt of the application in a letter dated January 10, 2024, and scheduled on-site evaluations for December 10 and 11, 2024.
- Institute of Engineering Education Taiwan (IEET) Accreditation: A total of 17 units – including engineering-related departments, the Department of Architecture, and the Electromechanical Elite Program under the College of Mechanical and Electrical Engineering – submitted applications for renewal and initial accreditation with IEET in October 2024 for the 2025 academic year cycle review. On-site evaluations are expected to take place between October and November 2025.
- Association to Advance Collegiate Schools of Business (AACSB) Accreditation: All departments under the College of Management continue to participate in the AACSB accreditation process. On July 1, 2022, the College submitted its Continuous Improvement Review (CIR) application. AACSB approved the continuation of the accreditation process in January 2023, and the on-site visit has been scheduled for May 25–27, 2025.

2-2 Risk Management and Internal Control

Risk management is the process of effectively managing potential incidents and minimizing their adverse impacts. This includes the establishment and implementation of internal controls, as well as the integration of various internal control and evaluation measures through control environments, risk assessments, control operations, information and communication, and supervisory operations, to reduce the internal risks associated with the inability to achieve the goals of the Bank.

• Promotion of Risk Management

In alignment with the “Principles for Risk Management and Crisis Response Operations for the Executive Yuan and Its Subordinate Agencies” and the accompanying “Operational Manual for Risk Management and Crisis Response,” as well as the “Principles for Promoting Risk Management” issued by the Ministry of Education, the University has established a risk management framework tailored to its institutional needs. This framework enables each unit to conduct risk assessments related to their respective operations and to adopt differentiated response strategies based on the assessed level of risk. Through this process, internal control mechanisms are re-evaluated, with a focus on strengthening critical control points. By implementing integrated risk management practices, reinforcing internal controls, and promoting self-monitoring mechanisms, the University aims to effectively reduce the likelihood of risk occurrence and ensure more robust governance and crisis preparedness.

2024 Risk Assessment Results

After assessment, the total risk value of the 125 risk items provided by all units:

Low risk (risk value 1, 2)	121 items
Medium risk (risk value: 3, 4)	3 items
High risk (risk value 6)	1 items

The 124 risk items with a risk value below 4 are all tolerable risks: Each unit will manage them independently, continuously monitor the risk level, and review them regularly to ensure that these risks remain tolerable.

One of the risk items with a risk value of 6 is an unacceptable risk. The business unit adds risk countermeasures and incorporates them into the design of the internal control system.

After the new risk countermeasures were introduced by the business unit, the risk value was reduced to 4 (Medium risk). The residual risk value in 2024 was as follows:

Low risk (risk value 1, 2)	121 items
Medium risk (risk value: 3, 4)	4 items
High risk (risk value 6)	0 item

• Implementing internal control

Internal control is the dynamic management process that integrates various business control and evaluation measures. Good internal control is the foundation of quality school governance, which can not only reasonably ensure the achievement of the school's goals, but also help to perform the function of preventing fraud. Therefore, the school has established an internal control system since 2012, and through the establishment and maintenance of an effective internal control mechanism, the administrative performance can be improved and the school's competitiveness can be enhanced. The internal control system shall be jointly participated in by all employees of the Bank. The five elements of the control environment, risk assessment, control operations, information and communication, and supervision operations are integrated to integrate various internal control and evaluation measures and incorporate them into the back-end of the management process to provide support for business planning and execution.

The School has implemented the following supervision operations according to the "Key Points of Internal Control Supervision" issued by the Executive Yuan, and has inspected the establishment and implementation of internal control. The school has also taken relevant countermeasures based on the identified internal control deficiencies and proposed suggestions for improvement:

Routine supervision

The supervisors of each unit are responsible for supervising the execution of authorized business according to their job responsibilities.

Self-assessment

The relevant unit evaluates the effectiveness of the five elements of the internal control, namely, control environment, risk assessment, control operations, information and communication, and supervision operations, according to the division of labor and responsibilities.

Internal audit

The internal audit unit assists the authority in checking the establishment and implementation of internal control based on an objective and fair position, and provides timely improvement suggestions. It may also provide suggestions or preventive opinions on the economic, efficient and effective use of the authority's resources, and future major challenges to management and performance.

• Conducting internal audits

The internal control self-assessment has been conducted in accordance with the regulations over the years. The assessment status in 2024 is as follows:

- Assessment items: 874
- Questionnaire recovery rate: 100%

All units have been instructed to make amendments to their internal control system based on the findings of the self-assessment, and the internal audit unit has been assigned to follow up on the improvement or reform suggestions.

	Implement	Partially implemented	Not yet implemented	Not yet occurred	Not applicable
2024	862 items	6 items	0 items	4 items	2 items

Strengthening the internal audit system

Through independent and objective evaluations conducted by internal audit, we can assist schools in assessing the establishment and implementation of internal controls, evaluating the economy, efficiency, and effectiveness of school resource use, and providing timely suggestions for improvement. This approach reasonably ensures the continuous and effective operation of the internal control system, promotes the achievement of administrative goals, and exerts the system's forward-looking function.

The School follows the "Regulations Governing the Management and Supervision of the National University Endowment Fund" promulgated by the Ministry of Education and the "Key Points of Internal Control Supervision" promulgated by the Executive Yuan. The audit tasks are performed by the audit staff of the Endowment Fund and the annual internal audit team according to the different sources of laws. The audit staff of the Endowment Fund and the annual internal audit team are divided into task groups. One of the audit staff is appointed as the principal, and several of the audit staff are appointed concurrently, who are selected by the principal.

The annual audit plan must be prepared for the audit and annual internal audit of the Endowment Fund. Based on the risk assessment results, the business items with higher risk values are selected to be audited on the audit schedule, and the working papers are prepared to implement the annual audit. In addition, if necessary, the school may conduct project audits on high-risk matters such as designated cases, abnormal matters, or external concerns, and formulate project audit plans and schedule project audits.

2024 Internal audit implementation status

- 7 audit items were completed in 2024, including 23 audit deficiencies and 23 audit suggestions.

Item number	2024 "Internal Audit" Scope	Audited unit
1	Student Affairs – Counseling	Office of Student Affairs
2	Student Affairs – Student Dormitory	Office of Student Affairs
3	General Affairs – Safety, Health, and Environmental Protection	Center of Safety and Environmental Protection
4	General Affairs – Campus Safety and Vehicle Management	Office of General Affairs, Military Education Office
5	Personnel Affairs – Recruitment	Office of Personnel
6	Personnel Affairs – establishment of clubs and subsidies for teaching and other staff	Office of Personnel
7	Information Processing – communication and operation safety management	Computer and Network Center

- 5 audit items of the "Endowment Fund" were completed in 2024, including 13 audit deficiencies and suggestions.

Item number	2024 Scope of "Audit for Endowment Fund"	Audited unit
1	General Affairs – Property management (property addition, inventory, relocation, impairment)	Office of General Affairs
2	Financial matters – National Science and Technology Budget Report	Office of Accounting
3	Fundraising and acceptance of donations – Promoting small-scale donation system	Alumni Liaison Center
4	Financial Matters – Budgeting	Office of Accounting
5	R&D matters – Subsidy for innovative research and technology development – growth community	R&D Office

2024 "Annual Internal Audit" - Deficiency Statistics							
Unit	Office of Student Affairs	Center of Safety and Environmental Protection	Office of General Affairs	Military Education Office	Office of Personnel	Computer and Network Center	Total
Audit items	2	1	1	1	2	1	
Execution of the aspect of defect	0	3	2	1	2	0	8
Lack of regulatory requirements	0	0	1	0	0	0	1
Lack of internal control system	3	1	1	1	3	1	10
General advice	0	0	1	0	3	0	4
Subtotal	3	4	5	2	8	1	23

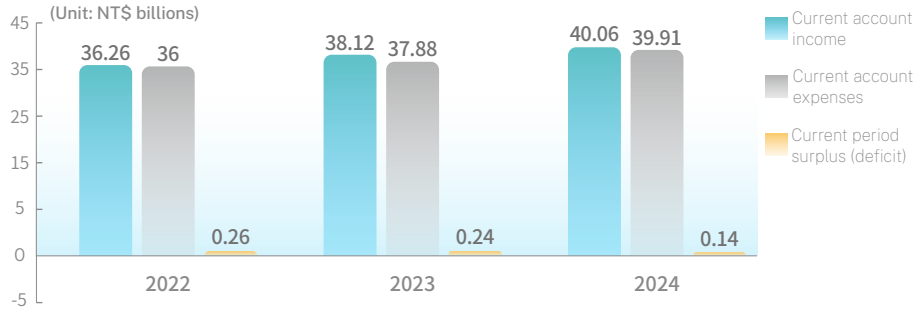
2024 "Audit of the Endowment Fund" – Statistical Analysis of Deficiencies					
Unit	Office of General Affairs	Office of Accounting	Alumni Liaison Center	R&D Office	Total
Audit items	1	2	1	1	
Execution of the aspect of defect	2	1	1	1	5
Lack of regulatory requirements	0	0	0	0	0
Lack of internal control system	0	1	1	1	3
General advice	3	2	0	0	5
Subtotal	5	4	2	2	13

2-3 Financial Performance and Management

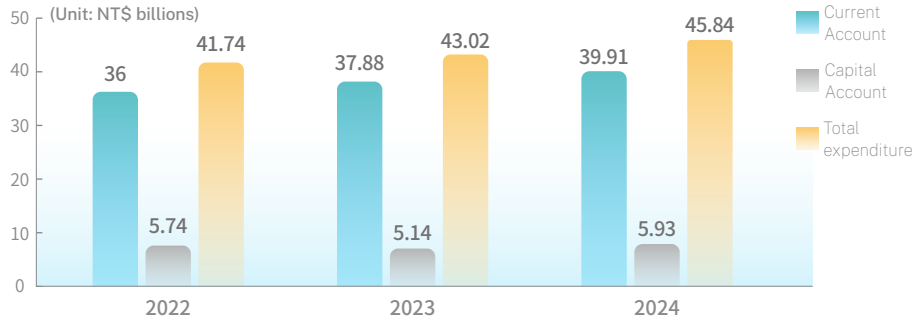
From 2022 to 2024 (academic years 111 to 113), the University's recurring revenue amounted to NT$3.626 billion, NT$3.812 billion, and NT$4.006 billion, respectively, reflecting consistent year-over-year growth. Major sources of revenue included tuition and miscellaneous fees, income from cooperative education programs, and government subsidies (including grants related to teaching and research). During the same period, total capital expenditures were NT$4.174 billion, NT$4.302 billion, and NT$4.584 billion, also showing a stable upward trend. Nearly 50% of these expenditures were allocated to teaching, research, and student support costs.

To ensure the sustainable development of the University, overall financial status and project priorities are carefully assessed and incorporated into the annual budgeting process. These are closely aligned with the University's medium- and long-term development plans, with the goal of enhancing resource utilization efficiency and ensuring rational allocation – ultimately supporting the University's long-term strategic and distinctive development objectives.

2022 to 2024 Current Account Income and Expenses



Total Expenditures of the Current and Capital Accounts from 2022 to 2024



• Endowment Fund Management Mechanism

The University's Endowment Fund budget execution, accounting operations, and internal audits are conducted in accordance with the Act for the Establishment of the National University Endowment Fund, the Regulations Governing the Administration and Supervision of the National University Endowment Fund, the Uniform Accounting System for National University Endowment Funds, and the University's Regulations for the Management of Self-Financed Revenues and Expenditures. These activities are carried out under the guiding principle of maintaining a balanced budget or generating a surplus.

To ensure sound financial management and the effective implementation of institutional objectives, the University has established several governance bodies, including the School Development Committee, the Endowment Fund Management Committee, and the Budget Audit Committee. Additionally, an Internal Audit Team has been formed to monitor financial integrity and compliance. Furthermore, the University has established an Internal Control Task Force, chaired by the Vice President responsible for internal control oversight. This task force is tasked with supervising, promoting, and executing internal control measures aimed at mitigating risks within a reasonable scope and ensuring the sustained and effective operation of human resources, financial systems, and overall university administration.

• Changes in available funds

Item	Unit: NT$ thousands	
	Expected number (*1)	Actual number
Beginning cash and time deposit (A)	3,994,553	4,010,537
+ Cash flow from regular door in the current period (B)	3,712,171	3,814,718
− Current cash expenditure on regular door (C)	3,248,253	3,455,565
+ Cash Revenue from current property, real estate, and other assets (D)	408,768	460,228
− Current cash expenditures for property, real estate, and other assets (E)	771,155	624,624
+ Current net(increase) decrease in financial assets (F)	0	0
+ Current net investment(increase)decrease (G)	-60,000	-132,839
+ Current long-term debt borrowings (H)	0	0

Item	Unit: NT$ thousands	
	Expected number (*1)	Actual number
− Repayment of long-term debts in the current period (I)	0	0
+ other effect of increase (decrease) in cash in the current period (±) (J) (*2)	200,843	113,750
Closing cash and time deposits (K=A+B-C+D-E+F+G+H-I+J)	4,236,927	4,186,205
+ Closing short-term variable cash assets (L)	53,222	104,008
− Closing short-term payables (M)	1,045,673	907,750
− Number of capital subsidy plans that have not been executed (N)	0	115,243
Forecast of available funds at the end of the period (O=K+L-M-N)	3,244,476	3,267,220
Other important financial information		
The budget of the construction project and the budget of the fixed assets at the end of the period that have been approved but not yet prepared (*3)	2,696,267	7,353,766
Government grants	1,115,688	1,119,714
The reserve appropriated by the school (*4)	1,036,528	1,193,675
Funds available for use by schools	544,051	5,040,377
Loan from external banks	0	0

• Amount of time deposits and interest income over the years

In order to strengthen the school's autonomy, promote the flexibility of financial utilization, and ensure the sustainable operation of the school's affairs fund, in response to the development trend of high education, improve the quality of education, and enhance education performance, the school has formulated the "Regulations Governing the Management and Acquisition of Revenue and Expenditure of the School's Investment" in accordance with the Regulations Governing the Administration and Supervision of the National University's Endowment Fund, as the basis for the school's sustainable investment. The investment strategy of the school is based on the concept of long-term asset allocation, and the principle is to invest in fixed income bank time deposits.

Year	Time deposit amount (NT$)	Interest income (NT$)
2021	4,138,107,899	30,594,245
2022	4,587,208,899	52,638,190
2023	5,037,497,899	72,671,300
2024	5,236,997,899	90,702,316

• Sustainability of the Endowment Fund

In accordance with the Regulations for the Management of Income and Expenditure from Investment Gains and the Guidelines for the Establishment of the Investment Management Committee for the University Affairs Fund, the University convened the Investment Management Committee to formulate its investment strategy. Stock investments are made with a long-term holding approach, focusing primarily on dividend income rather than capital gains. The investment strategy prioritizes companies committed to Environmental, Social, and Corporate Governance (ESG) principles, aligning with the University's commitment to social responsibility. This approach aims to mitigate long-term risks to the University Affairs Fund and ensure its sustainable operation.

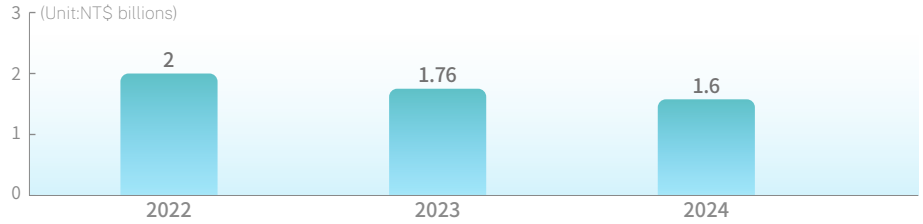
2024 Sustainability Investment Status		
Subject of investment	Amount of cash (NT$)	Percentage
Electronics industry	172,903,330	80.75%
Financial insurance	23,510,570	10.98%
Plastic industry	1,798,623	0.84%
Steel industry	1,070,609	0.50%
Shipping and Transportation	1,712,974	0.80%
Food Industry	1,862,859	0.87%
Others	11,262,805	5.26%
Total investment	214,121,771	100.00%

• Striven for External Resources

Fundraising by Alumni

The graduates of the University have achieved outstanding accomplishments and actively participate in NTUT Alumni Associations and Lions Clubs across Taiwan and around the world, including in North America, Japan, China, Hong Kong, Thailand, and Malaysia. These associations serve as platforms for mutual trust and support, fostering unity and strengthening the collective influence of NTUT alumni.

Outstanding NTUT alumni around the world serve as the strongest support for enhancing the University's overall performance. Stable and close cooperation between alumni and the University significantly amplifies the potential of both parties. By leveraging resources provided by alumni and cultivating the technical talent they require, the University fosters alignment with its development direction and strategies, strengthening alumni cohesion and sense of belonging. In return, alumni are inspired to give back – providing support for the University's future development, assisting in the commercialization of research achievements by faculty and students, and creating a sustainable, continuous cycle of mutual growth between the University and its alumni. Looking ahead, it is our hope that both NTUT and its alumni will continue to thrive and grow together through their enduring partnership.

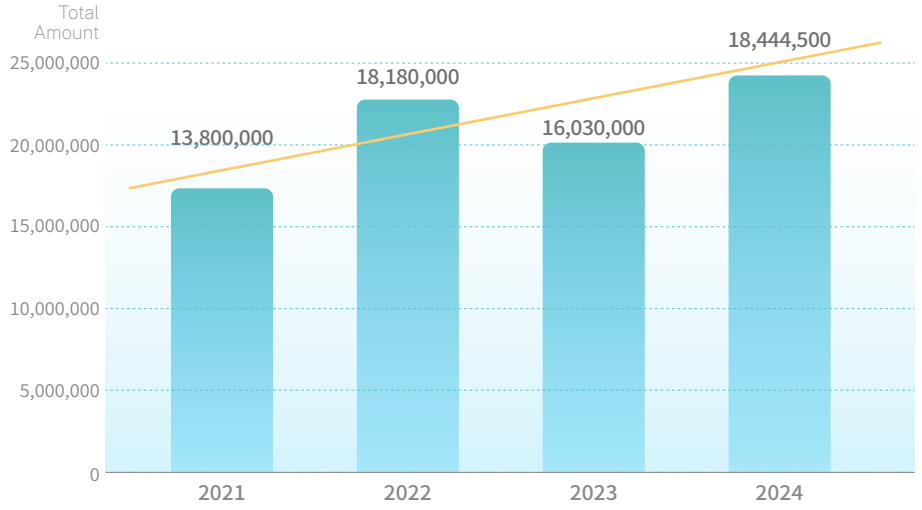


Distribution of Scholarships

To support and cultivate underprivileged students, the University allocates an annual budget for tuition subsidies and student incentives to fund various financial aid and scholarship programs. In addition, with generous donations from alumni, the University has established scholarships such as the Long-Yu Scholarship and the Wishes Scholarship. It also actively assists students in applying for both internal and external scholarships, including the Wen-Zhi Yang Alumni Scholarship, the Wellforce-OSK Scholarship, and the Ouyang Cui & Wei Bo-Hua Scholarship for Disadvantaged Students – each designed to support students with diverse financial needs.

- Amount of scholarships in 2024 (NT$)

Scholarships inside and outside the campus	The "Grateful" Scholarship	Long-Yu Scholarship
8,944,500	5,000,000	4,500,000



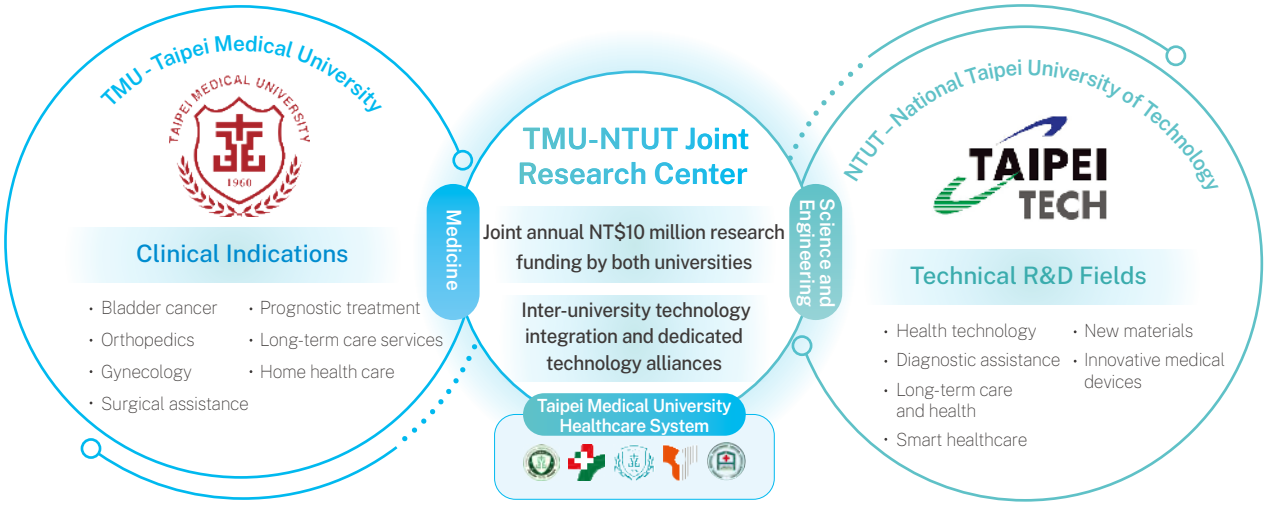
Industry–academia collaboration

The University integrates internal resources and has established a research industrialization platform to promote team-based collaboration. It actively matches suitable faculty with industry needs and has partnered with more than 10 leading domestic and international companies to establish joint R&D centers. Annual collaboration with enterprise entities exceeds NT$5 million, focusing on key areas such as energy, artificial intelligence (AI), and semiconductors, while also fostering international connections. Long-term partnerships have been established with top academic institutions including MIT, UC Berkeley, Penn State, UC San Diego (UCSD), and Taipei Medical University.

The University actively leads among technical and vocational institutions, aligning with national policy and advancing the United Nations Sustainable Development Goals (SDGs). It maximizes the synergy of industry–government–academia partnerships by leveraging government resources. Platforms such as the NTUT-MIT Urban Science Laboratory (in collaboration with Foxconn and Pioneer) and the NTUT-Taiwan Rolling Stock Smart Electronics R&D Center have both secured funding from the National Science and Technology Council under the AIR Center initiative. Additionally, the Information Security Excellence Center and the National Space Organization have been established in the University's Pioneer Building, fostering future collaboration and strengthening the University's capacity for forward-looking industrial research.

The NTUT-TMU Joint R&D Center (in partnership with Taipei Medical University) has also achieved outstanding results, exemplifying complementary expertise and collaboration in promoting the industrialization of smart medical research. Currently, 10 teams have received government grants totaling approximately NT$50 million.

Implementation Strategy: Establishing a Smart Biomedical Accelerator to Commercialize R&D Outcomes



Key Promotion Results

- **10** inter-university R&D teams
- **1** spin-off startup established, **2** startups under planning
- **6** patent applications
- **1** inter-university technology transfer (royalty amount: NT$ **1** million)
- **7** teams received government grant programs (total funding nearly NT$ **40** million)
- Participated in BIO Asia–Taiwan for **3** consecutive years, facilitating partnerships with international companies

TMU-NTUT Joint Research Center Grant Programs

TMU-NTUT Joint Research enter Grant Programs

2021: **25** teams submitted, **8** teams granted
2022: **23** teams submitted, **7** teams granted
2023: **16** teams submitted, **10** teams granted

New Annual Submission Schedule

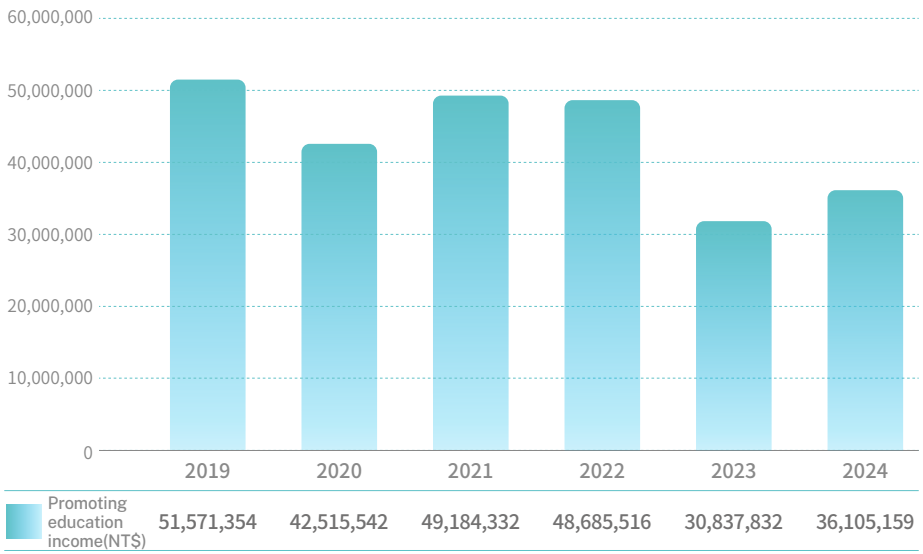
- **2024/9/30** — Proposal briefing; announcement via Little ostman system
- **2024/10/3** — Proposal submission deadline
- **2024/11** — New proposal review meeting
- **2025/1/1** — Project implementation begins
- **2025/6** — Mid-term review
- **2025/12** — Final review / Project completion

Proposal Types	Funding	Goals
Product-Oriented	Up to NT$ **4** million for joint proposals	Conduct market-oriented proof of concept for R&D results with industrial value, aiming for **patent licensing, spin-off startups, and product commercialization**
Seed Type	Up to NT$ **2** million for joint proposals	Align with government policies and industrial development trends, targeting **patent applications and linkage to large-scale government commercialization programs**
Data-Driven	Up to NT$ **500,000** per school for individual proposals	Identify distinctive R&D projects from both universities and match them with **promising technical teams** to develop joint collaboration initiatives

Promotion Method

Promoting education income

The Continuing Education Division of NTUT designs professional courses based on departmental specialties and aligned with industry needs. These offerings include both credit and non-credit programs. Recent statistics on continuing education revenue are illustrated below:



	2019	2020	2021	2022	2023	2024
Promoting education income(NT$)	51,571,354	42,515,542	49,184,332	48,685,516	30,837,832	36,105,159

2-4 Supply Chain Management and Green Procurement

• Green Procurement Policy

NTUT responds to the government's green office initiative by following annual green procurement regulations, establishing a procurement system that supports an environmentally friendly campus. All departments are encouraged to purchase eco-labeled products that are less harmful and less polluting, and are also encouraged to choose green products with energy-saving labels. To promote sustainable development and fulfill university social responsibility, NTUT prioritizes procurement from nearby small and medium-sized enterprises (SMEs) and supports preferential purchasing from organizations serving people with disabilities. By adopting an eco-friendly consumption model, NTUT's green procurement in 2024 yielded environmental benefits including a reduction of 4,748.96 trees cut, 19.24 metric tons of CO_2 emissions, and 0.01 metric tons of waste, continuing to practice environmental protection principles.

• Green Electronics Equipment Procurement Ratio

The university continues to implement the green procurement policy, maintaining a 100% procurement ratio for green electronics in 2024. With the support and cooperation of all faculty and staff, the university prioritizes energy-saving electronic equipment with eco-labels, including projectors, computer hosts, monitors, scanners, and printers. According to 2024 statistics, green procurement measures saved approximately 28,493.36 kWh of electricity over the year, showing a steady growth trend compared to previous periods. NTUT will continue promoting energy conservation and carbon reduction through concrete actions, implementing environmental protection and sustainable resource management, and fulfilling its social responsibility toward climate change and sustainable development.

• Procurement of office paper

The University actively promotes the green procurement policy and continues to prioritize the purchase of office paper with environmental labels. In the past three years, the green procurement ratio has reached 100%. This helps reduce excessive extraction of natural resources, improve resource utilization efficiency, and achieve the goals of resource circulation and sustainable management. According to 2024 statistics, the environmental benefits brought by green procurement are equivalent to saving 122 trees from being cut down, clearly demonstrating NTUT's active efforts in implementing environmental protection, promoting energy conservation and carbon reduction, and supporting sustainable resource use.

• Local Procurement

NTUT upholds the principles of sustainable development and local sourcing, actively promoting local procurement policies. Faculty and students are encouraged to prioritize domestic suppliers and select nearby partners to reduce carbon emissions from long-distance transportation, minimize environmental impact and external costs, and effectively mitigate the effects of climate change and resource depletion.

In recent years, the University's procurement has mainly come from domestic small and medium-sized enterprises, with the local supply ratio consistently maintained at over 90%. This not only shortens delivery times and improves service efficiency, but also enhances supply chain stability and risk management, promotes the development of local industries, and substantially increases the overall social and economic value.

The decline in 2024 compared to 2023 was primarily attributable to baseline fluctuations in total annual procurement. This is considered a normal year-on-year variation and does not impact the ongoing implementation of local supplier procurement policies.

Item	2022	2023	2024
Net purchases from local suppliers (NT$)	333,316,131	425,830,421	338,958,100
Total net purchase (NT$)	356,725,517	430,666,290	358,334,114
Ratio of net purchases from local suppliers (%)	93.4%	98.88%	94.59%

• Priority procurement

In order to fulfill the University Social Responsibility (USR), promote social welfare, and protect the rights of persons with disabilities to participate equally in social and economic activities, NTUT actively utilizes administrative procurement resources to support disadvantaged groups and continues to encourage all units on campus to prioritize the purchase of products and services provided by welfare institutions or sheltered workshops for people with disabilities. In recent years, for various procurement projects such as printing, household goods, and cleaning services, the University has publicly invited relevant groups to participate and, within the limits permitted by procurement regulations, has prioritized awarding contracts to these groups. This approach helps reduce the disadvantages they face in general market competition and enhances their opportunities for economic self-reliance. Through this initiative, the University not only upholds the core values of social care and support for disadvantaged individuals but also demonstrates its concrete commitment to fostering diversity, inclusion, and social integration.

Item	2022	2023	2024
Sheltered shop (NT$)	3,913,000	4,054,650	4,400,000
Disadvantaged groups (NT$)	400,000	400,000	322,000
Total (NT$)	4,313,000	4,454,650	4,722,000

• Campus dining management

Based on laws and regulations

From 2022 to 2024, NTUT maintained contracts with six food vendors. All contract management provisions are based on the Act Governing Food Safety and Sanitation and the School Health Act. In the spirit of sustainability, vendors are required to prioritize the use of certified local agricultural products from central agricultural authorities and only use non-GMO fresh ingredients and primary processed products. Fresh meat, seafood, and vegetables must be accompanied by drug residue-free test certificates or certification marks issued by the government or professional impartial organizations.

Align with government strategies

In line with the Environmental Protection Administration's plastic restriction policies, NTUT has enforced a ban on melamine tableware, disposable utensils, single-use plastic straws, and free plastic shopping bags in all on-campus dining areas. A pricing mechanism is applied to disposable take-out containers, and discounts are offered to encourage the use of reusable cups.

Implement education and training

One food hygiene seminar is held each semester, and participation by all food vendors is mandatory. These sessions are also open to all NTUT faculty, staff, and students to raise awareness of campus food safety.

Implementation results

From 2022 to 2024, nearly 180 food vendor inspections and supervisory checks were conducted. Six large-scale food safety seminars were held. A total of 9 violation notices were issued in 2022, 10 in 2023, and 16 in 2024.

Supervision and management

Weekly inspections of food hygiene are conducted; each semester includes a supervisory check of food service areas, a joint health inspection, and two food service management meetings. Violations are addressed through written notices, verbal warnings, citations, and fines to ensure compliance and reinforce vendor accountability.

Honors

NTUT successfully supported multiple food vendors in passing the Taipei City "Catering Hygiene Management Classification" evaluations held biennially in both 2022 and 2024.

2-5 Information Security and Personal Data Protection

• Information Security Promotion Organization

National Taipei University of Technology – Information Security Promotion Committee

- Established and approved at the 8th Administrative Meeting of the First Semester of Academic Year 2021 on January 18, 2022
- Third Management Review Meeting of the Information Security Promotion Committee held on December 26, 2024

Chief Information Security Officer	Executive Secretary	Ex-officio Members
Vice President Shih-Hsuan Yang	Director of Computer and Network Center	Level-1 administrative unit head and deans of all colleges

Information Security Task Force	Information Security Internal Audit Team	Information Security Incident Response Team
Each primary administrative unit, college, and department shall designate one representative as a required team member, serving as a liaison, responsible for assisting in the promotion and implementation of information security-related matters.	Members are rotated from the Information Security Task Force to assist regularly with internal audit operations and follow-up actions.	When a Level 3 or Level 4 information security incident occurs at the University, the Chief Information Security Officer shall serve as the commander, assign team members as needed according to the nature of the incident, and convene incident response meetings.

Executed According to NTUT Information and Communication Security Maintenance Plan

To ensure the smooth operation of university operations and to prevent information or information systems from being subject to unauthorized access, use, control, leakage, destruction, tampering, or other compromise, and to maintain confidentiality, integrity, and availability (CIA), the following policy is established for all personnel to follow:

1. An information and communication security risk management mechanism shall be established, with regular reviews in response to changing internal and external threat landscapes to ensure the effectiveness of risk control.
2. The confidentiality and integrity of sensitive information and systems shall be protected to prevent unauthorized access or tampering.
3. The resilience of core ICT systems shall be strengthened to ensure business continuity.
4. In response to evolving cyber threats, cybersecurity education and training shall be provided. All staff are required to actively participate to enhance cybersecurity awareness.
5. Reward for outstanding personnel in information and communication security business.
6. Do not open emails from unknown senders or emails that cannot be clearly identified.
7. Prohibiting multiple users from sharing a single information and communication system account.
8. Improve the information security management structure and provide reliable information services.

• Effectiveness of Information and Communication Security Implementation

According to the "Classification Guidelines for Information and Communication Security Responsibility Levels," NTUT is designated as a Category C public institution. Across the domains of management, technology, and awareness/training, the University follows the Information and Communication Security Management Act and relevant government policies to formulate progressive improvement strategies and implement step-by-step action plans. This enhances the resilience of NTUT's cybersecurity framework and supports the long-term goal of sustainable development.

Aspect of management

Classification of information and communication systems and protection criteria	The Information Security Promotion Team assists each unit annually in classifying their information and communication systems. Based on the assigned protection levels, appropriate control measures are implemented to meet the system protection standards. The current protection classification includes: General level: 125 systems; Medium level: 70 systems; Packaged software: 100 items.
Introduction of the information security management system	NTUT has implemented an information security management framework campus-wide. Non-core ICT systems follow the university's Information and Communication Security Maintenance Plan, and adhere to the internal information security procedure manual. Core ICT systems, including all systems under the Computing and Network Center, are certified under the ISO 27001 Information Security Management System. The ISO 27001 certification scope covers 10 key systems, including operations and maintenance of data centers and network infrastructure (backbone and wireless network services), verified by BSI international standards.
	The university's Vice President serves as the designated Chief Information Security Officer (CISO).
	An Information and Communication Security Promotion Committee has been established to oversee the formulation, implementation, and review of ICT security policies. The Director of the Computing and Network Center serves as the Executive Secretary. Committee members include 22 first-level administrative supervisors and the deans of all colleges. The team comprises 54 designated members from administrative units and departments. The committee convenes at least once per year.

	An annual inventory of ICT assets and IoT devices (including school-procured and official-use equipment) is conducted across all units. A comprehensive registry is maintained to ensure systematic asset management.
	9 projects developed by external vendors commissioned by the institution.
	1 service rented by the institution.
	24 commercial software packages purchased by the institution.
	127 systems developed in-house by the institution.
	6 systems provided by supervisory, higher, or other agencies.
	An annual self-assessment of cybersecurity risks is conducted for all information systems across the university, with the implementation of appropriate security control measures selected based on the evaluation.
	Reviewed 51 SOP cases for outsourced information system development for administrative units.
Cybersecurity Designated Personnel	Two full-time information security specialists are assigned.
Internal Information and Communication Safety audit	Each year, members from the Computing and Networking Center serve as chief and deputy auditors, while unit representatives from the Information Security Promotion Team act as observers. A phased training approach is used to develop internal auditors, supporting units in promoting and implementing information security policies. In 2024, internal audits were completed for 6 administrative units and 5 academic units – a total of 11. The goal is to complete audits of all units within five years.
Business Continuity Operational Drills	Annual business continuity drills are conducted for 10 core and non-core system operations to ensure the ongoing availability and sustainability of systems. Future scenarios will include webpage defacement simulations for administrative and academic unit websites to test incident response preparedness.

Technical Aspect

Safety inspection	More than 500 vulnerability scans and 50 penetration tests are conducted annually.
Vulnerability Reporting Mechanism for Information and Communication Security	Endpoint control software is implemented in administrative units to support the Vulnerability Assessment Notification System (VANS) and Government Configuration Baseline (GCB), covering 1,420 devices.
Cybersecurity Protection	Endpoint antivirus software has been deployed on 2,748 devices in administrative units.
	Firewall systems have been fully deployed to ensure effective network segmentation and access control. Web Application Firewalls (WAF) have been implemented for critical systems to block malicious behavior and software attacks.
	Email servers are equipped with email filtering mechanisms.

Awareness and training

To cultivate an internal seed team for the information security management system, IT personnel from the Computing and Networking Center provide foundational audit training and cybersecurity education. A 3-hour cybersecurity course is designated as mandatory for school-affiliated staff under the continuing education requirements for civil servants. These training courses are included in internal audit checklists, and statistical records are regularly compiled to monitor the implementation and effectiveness of cybersecurity training across the university.

Cyber Security Education and Training	Full-time information security personnel are required to complete 16 hours of professional or functional training annually.
	IT personnel must complete 3 hours of professional or functional training every 2 years, and 3 hours of general cybersecurity awareness training each year.
	General users and executives are required to receive 3 hours of general education and training each year.
	3 social engineering training sessions.
	2 university-wide information security education sessions.
	2 university-wide information system self-assessment training sessions.
	2 sessions of ISO 27001:2022 Information Security Management System auditor training.
	3 online course platforms are available for staff to access training on demand.
Professional information and communication security certificate and functional training certificate	The Network Center has obtained 26 ISO 27001:2022 Lead Auditor Certificates, and other units have received 4 certificates. In addition, the Network Center has obtained 6 information security competency certificates.



• Management Objectives and Strategies for Personal Data Protection

In 2015, NTUT established a four-tier personal data management system based on the Personal Data Protection Act and the BS 10012 Personal Information Management System (UK Standard). The system clearly defines the Personal Data Protection Management Policy, standard operating procedures, and forms to ensure that the collection, processing, and use of personal data within the university comply with legal requirements. In addition, NTUT has established the “Guidelines for the Establishment of the Personal Data Protection Management Committee,” which is composed of cross-unit representatives. The Vice President serves as the convener, and the Chief Secretary as the Executive Director. Under the committee, two teams are established: the Personal Data Protection Team and the Internal Audit Team. Each unit appoints personnel to the Personal Data Protection Team to promote university-wide education and training, data inventory, risk assessment, and other related tasks. The Executive Director appoints members to the Internal Audit Team, which conducts on-site audits to ensure the effective implementation of the personal data protection system across the university.

• Personal Information Protection Management Mechanism and Process

NTUT reviews and continuously enhances its personal data management system annually based on the Personal Data Protection Act and its enforcement rules, the BS 10012 Personal Information Management System (UK standard), the Education Sector Information Security and Personal Data Management Regulations, relevant laws and regulations, stakeholder feedback, and operational needs. Through a personal data inventory process, the University identifies the volume, scope, and flow of personal data collected, processed, and used in all business operations. It also performs privacy impact assessments. Units then conduct self-assessments to evaluate risk distribution across campus. Reports are generated and submitted to the Personal Data Protection Management Committee to determine acceptable risk thresholds and required risk treatments, ensuring effective risk control for personal data across the institution.

• Comprehensive Personal Data Protection Training

NTUT conducts annual education, training, and awareness campaigns on personal data protection. All departments are required to assign personnel to attend, enhancing staff knowledge and awareness of data privacy. Staff are also encouraged to attend external training sessions to further strengthen their expertise in personal data protection.

To facilitate timely communication of personal data protection information, NTUT’s official website hosts a “Personal Data Protection Section,” where staff can access internal and external guidelines and materials. The site also shares updates, free online courses, and includes a dedicated contact window and email address to ensure prompt responses and handling of complaints or data breach incidents.


2-6 Academic and Integrity Ethics

• Academic Ethics

NTUT places great importance on academic ethics. To establish a sound academic ethics mechanism, deepen ethics education, ensure high research quality, and foster a positive academic research atmosphere, the university has set up an Academic Ethics Office. This dedicated office handles academic ethics matters to ensure self-regulation of research behavior, uphold quality standards, and enhance the academic environment.

• Academic Ethics Guidelines

The evaluation of academic ethics for faculty and student research output follows the Ministry of Education's regulations, including the "Guidelines for Handling Academic Ethics Cases of Postsecondary Institutions," the "Regulations for Faculty Qualification Review of Postsecondary Institutions," and related provisions. NTUT has formulated and implemented the "NTUT Guidelines for Handling Violations of Faculty Qualification Review and Other Academic Ethics Cases" based on these standards. To uphold the quality of higher education and academic integrity, NTUT has also established a mechanism for handling academic misconduct related to theses. In accordance with the Degree Conferral Act, the university's Doctoral Degree and Master's Degree Examination Regulations, it has formulated the "NTUT Guidelines for Handling Academic Ethics Violations in Doctoral and Master's Theses." To enhance the academic ethics awareness and capabilities of faculty and researchers and improve research quality, NTUT has enacted the "Implementation Guidelines for Academic Research Ethics Education for Faculty and Researchers" and the "Implementation Guidelines for Academic Research Ethics Education for Graduate Students," which govern course requirements and recognition of instructional hours. If an academic ethics violation is reported, the Academic Ethics Office, following the "NTUT Academic Ethics Office Establishment Guidelines," acts as the primary contact point. It receives the case and forwards it to the responsible internal unit for appropriate handling. Furthermore, the university regularly announces updates to relevant governmental regulations and information to reinforce academic ethics education.

• Academic Ethics Promotion Status

Since the establishment of the Academic Ethics Office in December 2019, the office has consistently overseen academic ethics affairs and supported the promotion of ethics-related education, training, and coursework. The office compiles and shares materials such as the "Summary of Cases of Academic Ethics Violations" jointly released by the National Science and Technology Council and the Ministry of Education, as well as "Copyright Issues Related to Theses and Dissertations." These resources are made publicly accessible on the NTUT Academic Ethics webpage. Academic ethics regulations are regularly promoted at major university events, including orientations for new faculty. All NTUT faculty and researchers–including research fellows, part-time and full-time research assistants, and postdoctoral researchers – are required to submit proof of having completed academic ethics training before submitting research project proposals. Additionally, faculty and students are encouraged to attend academic ethics courses, and ongoing efforts are being made to raise awareness and foster compliance. These actions ensure that both teachers and students possess a sound understanding of academic ethics and apply it in practice.

• Academic Ethics Training Courses

Each semester, the NTUT Library organizes academic training sessions for graduate students on research skills and thesis writing. These courses are designed to help students understand what constitutes plagiarism and how to locate high-quality academic resources. The training effectively builds a solid foundation in academic ethics before students begin writing their theses, thereby preventing academic misconduct. Over the past three years, a total of 53 sessions have been held, attended by 2,247 participants. Most courses are also recorded, providing flexible access to learning through multimedia formats.

• Integrity and Service Ethics

To promote integrity and service ethics, NTUT has set up a "Political Ethics Promotion" section on the Secretariat's website, where relevant regulations and advocacy materials related to ethics and conflict of interest avoidance are posted. Additionally, an "Ethics and Integrity Section" is available on the Human Resources Office website for faculty and staff reference. The university actively encourages staff to participate in training on "Integrity and Service Ethics" and "Administrative Neutrality." Over the past three years, the total training hours for these topics have reached 1,545 hours – 473 hours in 2022, 486 hours in 2023, and 586 hours in 2024. Since 2023, the university has integrated ethics promotion into key internal events, such as new faculty orientation workshops, with 187 attendees recorded that year. In 2024, these efforts continued with seminars for faculty and staff, and the launch of online courses specifically for faculty members with administrative roles. A total of 282 participants joined these seminars and online sessions.

Related links

"Political Ethics Promotion" on the Secretariat homepage https://sec.ntut.edu.tw/p/412-1027-10225.php?Lang=zh-tw

"Integrity and Ethics Section" on the HR homepage https://per.ntut.edu.tw/p/404-1025-104346.php?Lang=zh-tw

03

Friendly Campus and Workplace

3-1 Human Rights Protection and Equality

• Management Approach

Human Rights Protection and Diversity and Equality			
Policies/ Commitments	NTUT implements measures such as diversified admissions, fair employee compensation, gender equality, assistance for disadvantaged students, academic counseling, and support for students with physical and mental disabilities to ensure equal rights and opportunities for all stakeholders. An evaluation and grievance mechanism has been established to continuously improve the campus environment and institutional policies.		
Responsible Unit	Office of Personnel, Office of Academic Affairs, Student Affairs Office, Military Training Office, Environmental Safety and Health Center		
	Goals and Actions		Evaluation Mechanism
Short-term (2 years)	1. Enhance students' and employees' understanding of human rights and gender equality policies. 2. Enhance the assistance and support mechanism for disadvantaged people.	3. To ensure the smooth implementation of diversified learning programs.	· Number of grievances on sexual harassment · Number of applicants for diversified learning programs · Student Counseling Participation Rate
Mid-term (4 years)	1. Promote the gender equality and diversified cultural education. 2. Establish a more comprehensive student assistance system to improve students' academic performance.	3. Expand the subsidies and support resources for disadvantaged people to improve their quality of life.	· Number of complaints and the result of the gender equality education activities · Performance of counseling for disadvantaged students · Diversified Entry Program
Long-term (8 years)	1. Achieve comprehensive equality in the workplace and education environment within the campus. 2. Guarantee all students can participate in learning and development equally regardless of their backgrounds.	3. Establish a long-term evaluation and improvement mechanism to continuously improve policy effectiveness.	· Gender equality indicator of schools · Achievements in the education and employment of disadvantaged students · Number of complaints and results
Corresponding Standards	GRI	· GRI 401 Employment and labor relations · GRI 405 Diversity and equal opportunity · GRI 406 No discrimination	
	SDGs		
	STARS	· PA 5: Diversity and Equity Coordination · PA 6: Assessing Diversity and Equity	· PA 7: Support for Underrepresented Groups · PA 8: Affordability and Access

• Human Rights Policy

(I) No discrimination in the selection and hiring of teaching and other employees

The School recruits, selects, evaluates, promotes, pays, and retires its teaching and other employees in accordance with the Act of Gender Equality in Employment and the Employment Service Act, and does not discriminate against them on the basis of race, religion, gender, sexual orientation, or age.

(II) Gender equality in the workplace

In accordance with the Act of Gender Equality in Employment, the salaries of employees are not differentiated by gender or sexual orientation. Employees with the same job or value are paid with the same salary. However, for the employees with outstanding performance, the school will reward them or raise their salary by one level based on their seniority, rewards and punishments, performance, or other legitimate reasons not related to gender or sexual orientation. Year-end appraisal is conducted annually. Appraisal notices are issued based on the appraisal results, including salary. If the appraisees are not satisfied with the appraisal results, they may file a complaint according to the regulations.

(III) Friendly workplace

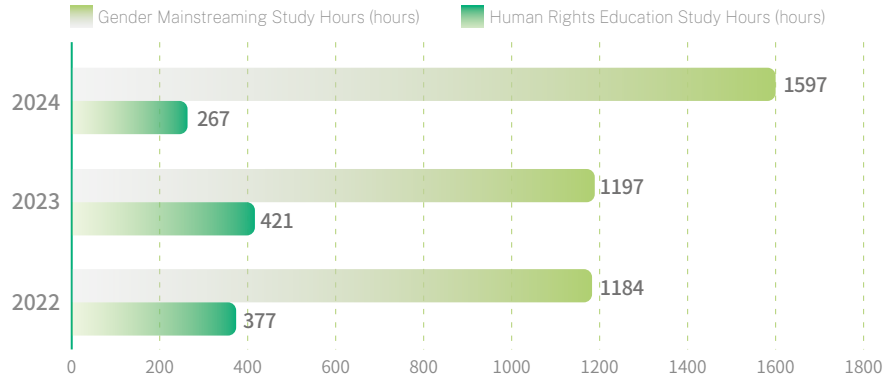
1. According to the "Guidelines for the Teaching and Other Staff of NTUT" and the "Contracted Employees Work Rules of NTUT," the university stipulates that faculty and staff may not work more than 4 hours of overtime per day or 20 (or 46) hours per month. Overtime may be compensated with overtime pay or compensatory leave. The university does not engage in forced labor or slavery, and does not employ child labor. A flexible working schedule is implemented (working hours from 08:00 to 09:00 and leaving hours from 17:00 to 18:00), along with the summer and winter break system. According to the "Act of Gender Equality in Employment," faculty and staff with children under the age of three may request a one-hour reduction in daily working hours.

2. In accordance with the "Teacher Leave Regulations" and the "Civil Servant Leave Regulations," NTUT provides 8 days of prenatal leave, 42 days of maternity leave, and 7 days of paternity checkup and paternity leave for faculty and staff. Contracted employees are granted 7 days of prenatal checkup leave, 8 weeks of maternity leave, and 7 days of paternity leave according to the "NTUT Work Rules for Contracted Employees." The university also provides a lactation room for use by faculty, staff, and visitors. In collaboration with childcare institutions (such as Taipei Private Hushan Kindergarten) and national childcare providers (such as Hess and Happy Marian), the university offers diversified and preferential childcare services to create a family-friendly work environment.

3. According to the "Organization and Review Guidelines for NTUT's Teacher Grievance Review Committee" and the "Establishment and Review Guidelines for NTUT's Staff Grievance Review Committee," faculty and staff who believe that working conditions or management practices (e.g. salary, job assignments, promotions, or evaluations) are inappropriate may file a grievance as provided. In addition, the "Guidelines for the Prevention and Handling of Workplace Sexual Harassment and Gender Discrimination at NTUT" and the "NTUT Sexual Harassment Prevention and Handling Guidelines" establish complaint channels for reporting harassment, ensuring the protection of staff rights. These protective mechanisms are publicly available on the NTUT HR Department's legal information section for faculty and staff reference. The relevant protection channels are announced in the legal area of the HR Department of the school for the reference of the teaching and other staff.

(IV) Encourage employees to participate in courses related to gender equality and human rights education:

In the last three years, the total number of learning hours reached 5,043 hours, of which 1,561 hours were in 2022, 1,618 hours in 2023, and 1,864 hours in 2024.



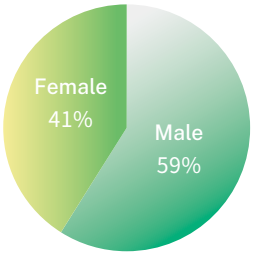
• Composition and distribution of teaching and other staff

The composition of our employees is academic and non-academic personnel, teachers and employees. Male employees account for 59% and female employees for 41% of all employees.

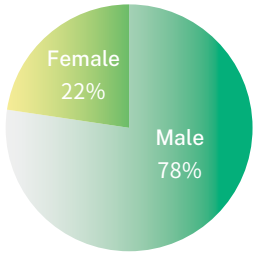
In 2024, the school had 490 full-time teachers and 374 part-time teachers, mainly distributed between 31 and 50 and over 51 years old, with a male-female ratio of about 3.5:1.

The administrative manpower of the school is mainly for internal official personnel and the staff of the school's affairs fund, with a ratio of 1:1.4. The gender is mostly female. The age of the staff of the school's affairs fund is relatively young, mainly 31–50 years old.

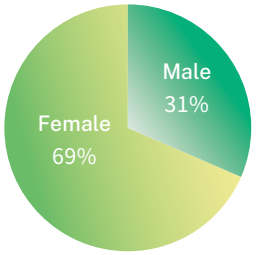
All staff
(including academic and non-academic staff)



Academic staff
(including full-time and part-time teachers)



Administrative staff
(including internal staff andemployees of the Endowment Fund)



Female Male

- Number of teaching and other employees in 2024

Category		Statistics by gender		Statistics by age			Total
		Men	Women	Under 30 years old	31-50 years old	Over 51 years old	
Full-time Faculty	Professor	190	30	2	225	263	490
	Associate Professor	97	33				
	Associate Professor-Level Professional Technical Personnel	1	0				
	Assistant Professor	64	22				
	Lecturer	2	0				
	Old System Assistant	3	2				
	Project Teacher	33	13				
	Subtotal	390	100				
Part-time Faculty	Professor	34	2	3	147	221	371
	Associate Professor	51	9				
	Assistant Professor	96	39				
	Lecturer	97	43				
	Subtotal	278	93				
Regular Administrative Staff	Civil Servants (including employees of the old system)	40	74	2	71	57	130
	Medical Staff	0	4				
	Rare Technical Personnel	0	0				
	New System Assistants	0	12				
	Subtotal	40	90				
Contract staff	Endowment Fund Appointed Personnel	45	114	178	334	52	564
	Contracted Employees (including occupational agents)	0	1				
	Research-based Teachers with Outstanding Performance	17	4				
	Postdoctoral Researchers Hired by Outstanding Teachers	14	3				
	Professional Researchers with Outstanding Teaching Performance	1	1				
	Doctorate Researchers in Themed Research Projects	28	9				
	Full-Time Assistants in Research Programs	106	221				
	Subtotal	211	353				

Category	Statistics by gender		Statistics by age			Total
	Men	Women	Under 30 years old	31-50 years old	Over 51 years old	
Part-time employees (non-student labor hires)	3	5	3	3	2	8
Military training officers	6	1	0	6	1	7
Stationed in the police station	2	0	0	0	2	2
Janitors and technicians	24	16	0	3	37	40
Total	954	658	188	789	635	1612

• Workplace Equality, Diversity, and Inclusiveness

According to Article 38, Paragraph 1 of the People with Disabilities Rights Protection Act, when the total number of employees in a public school exceeds 34, the number of employees with employment capability who have disabilities must not be less than 3% of the total number of employees (those covered under public and labor insurance). NTUT not only meets this legal requirement but consistently exceeds it. According to Article 4, Paragraph 1 of the Indigenous Peoples Employment Rights Protection Act, for public schools located outside indigenous areas, one indigenous person must be employed for every 100 individuals in five specified employment categories (e.g. contract and hourly staff). NTUT is located in a non-indigenous area, and the number of employees in these categories has never exceeded 100 per month in recent years. Therefore, the required number of indigenous employees is zero. However, the university currently employs nine indigenous staff members. NTUT upholds workplace diversity and imposes no restrictions based on ethnicity, age, gender, or sexual orientation in its hiring practices.

・Number of Indigenous Peoples and Employees with Disabilities

Category	2022		2023		2024	
	Indigenous peoples	People with disabilities	Indigenous peoples	People with disabilities	Indigenous peoples	People with disabilities
Required Employment	0	59	0	59	0	59
Actual Employment	9	62	7	63	9	62
Vacancies	0	0	0	0	0	0
Employment Rate	-	105%	-	106%	-	105%

・Percentage of Foreign Full-time Faculty

Category	Academic Year 2022		Academic Year 2023		Academic Year 2024	
	Number of students	Percentage (%)	Number of students	Percentage (%)	Number of students	Percentage (%)
Full-time Foreign Faculty	9	1.91%	10	2.06%	13	2.65%
Part-time Foreign Faculty	11	2.61%	11	3.14%	9	2.43%
Total	20	2.24%	21	2.51%	22	2.56%

• Employee Remuneration

The remuneration for NTUT faculty and civil servants is handled in accordance with the Teacher Remuneration Act and the Public Functionaries Remuneration Act. Faculty members are also provided with flexible pay in the areas of teaching, research, and service.

(I) Contract staff hired under the university endowment fund are paid based on NTUT's "Salary Scale for Contract Employees," and receive professional allowances according to the "Job Allowance Table." Researchers hired by outstanding teachers under the research and industry–academia collaboration program are paid starting from the postdoctoral researcher level, in accordance with NTUT's "Researcher Salary Reference Table" as stipulated in the "Regulations for the Appointment of Researchers by Outstanding Teachers."

(II) The remuneration for full-time project personnel (including postdoctoral researchers and full-time assistants) is issued in accordance with NTUT's "Reference Table for the Remuneration of Full-Time Project Personnel," and is disbursed within the salary budget allocated to each project. However, if the principal investigator or hiring unit comprehensively considers the project personnel's work responsibilities, professional skills, expected performance, and academic/professional background, and separately sets the remuneration amount, and such amount is explicitly approved by the relevant funding (commissioning) agency, the corresponding personnel expenses may be disbursed within the project budget. The minimum salary for the aforementioned personnel is higher than the statutory minimum wage for the corresponding year.

(III) For hourly wage employees, including part-time research assistants, teaching assistants, work-study students, and temporary staff, their hourly pay is greater than or equal to the statutory minimum hourly wage for the corresponding year.

・Employee Salary Data in the Last Three Years

			2022		2023		2024	
			Average salary	Median salary	Average salary	Median salary	Average salary	Median salary
Appointment of Outstanding Teachers to Research Roles	Research-based Teacher	Male	71161	70985	71308	73310	71493	72415
		Female	71588	71985	75017	74350	76254	74059
	Postdoctoral Research Fellow	Male	58939	58710	59326	58920	65466	62390
		Female	64890	64890	59776	58920	63506	61277
	Professional Researcher	Male	80100	78300	0	0	130000	130000
		Female	65000	65000	71500	71500	74000	74000
Full-time Project Personnel	Postdoctoral Research Fellow	Male	62176	60000	67008	62400	69212	65208
		Female	63114	60000	66745	69985	60299	63900
	Full-time Assistant	Male	42287	39500	46932	42520	47202	43132
		Female	41544	39000	43089	40560	42971	41000
Contracted Personnel	Contracted Personnel	Male	41664	38730	43327	41030	45703	42810
		Female	40896	39540	43803	42070	46087	44730

*Unit: NT$

・Remuneration Ratio of Employees at All Levels:

Full-time Employees	Male	1.18
	Female	1

Note: Due to a higher proportion of male employees in professional research and technical roles at the university, the overall remuneration for male employees is higher than that for female employees.

・Ratio of Highest Remuneration to Total Annual Remuneration of Employees:

Ratio of highest remuneration to median salary of employees	3.83
Salary growth ratio	1.02

Note [1]: Total remuneration ratio = Annual total remuneration of the highest-paid individual ÷ Median annual total remuneration of all other employees.

Note [2]: Percentage increase in the total remuneration ratio = Percentage increase in the annual total remuneration of the highest-paid individual ÷ Percentage increase in the median annual total remuneration of all employees (excluding the highest-paid individual).

- Distribution Ratio of Salaries for Personnel Employed via the Endowment Fund and Research Projects:

Salary Distribution Ratio Table for Full-Time Personnel Employed under the Endowment Fund and Projects								
Salary range (NT$)	Appointment of Outstanding Teachers to Research Roles		Full-time Project Personnel				Contract Employees	
			Full-time Assistant		Postdoctoral Research Fellow			
	Number of students	As a percentage of total number of people	Number of students	As a percentage of total number of people	Number of students	As a percentage of total number of people	Number of students	As a percentage of total number of people
80,001 and above	6	15%	3	0.92%	5	13.51%	0	0.00%
70,001-80,000	10	25%	4	1.22%	1	2.70%	0	0.00%
60,001-70,000	21	52.5%	16	4.89%	26	70.27%	15	9.43%
50,001-60,000	2	5%	32	9.79%	4	10.81%	27	16.98%
40,001-50,000	0	0.00%	156	47.71%	0	0.00%	67	42.14%
30,001-40,000	1 Note[1]	2.5%	115	35.17%	0	0.00%	48	30.19%
27,470-30,000	0	0.00%	1 Note[2]	0.31%	1 Note[2]	2.70%	2 Note[3]	1.26%
Total	40	100%	327	100.00%	37	100%	159	100%

Note[1]: One researcher employed under the Outstanding Teacher program receives a monthly salary between NT$30,000–40,000. This individual is a retired military officer re-employed by NTUT. According to Article 34, Paragraph 1 of the Act of Military Service for Officers and Non-Commissioned Officers of the Armed Forces, if the total monthly remuneration exceeds the combined ceiling of civil servant base pay and professional allowances (NT$37,000 in 2024), retirement pension payments are suspended until the cause ceases.

Note[2]: One full-time assistant and one postdoctoral researcher receiving monthly salaries between NT$27,470–30,000 are retired civil servants re-employed by NTUT. As stipulated in Article 77, Paragraph 1 of the Act Governing Retirement, Severance, and Bereavement Compensation for Civil Servants, when a retired civil servant is reappointed to a publicly funded position and receives monthly remuneration exceeding the statutory minimum wage (NT$27,470 in 2024), their pension payments are suspended until the cause ceases.

Note[3]: Two contract employees with monthly salaries of NT$26,400–30,000 were hired based on junior college qualifications.

- The Ratio of the Minimum Salary and Basic Wage of the Full-Time Personnel in the Endowment Fund and Research Projects:

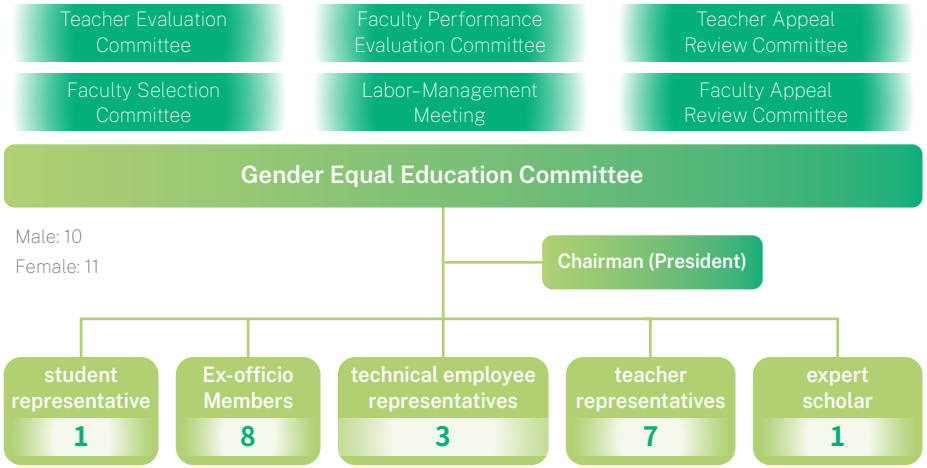
Year			202	2023	2024
Types of Hired Personnel			Minimum Salary of All Types of Employees: Basic Wage (Basic Working Hours)		
Full-time Staff (Monthly Salary)	Appointment of Outstanding Teachers to Research Roles	Research-based Teacher	2.57	2.23	2.64
		Postdoctoral Research Fellow	2.33	2.23	2.37
		Professional Researcher	2.65	2.71	3.71
	Full-time Project Personnel	Full-time Assistant	1.00	1.27	1
		Postdoctoral Research Fellow	2.22	1.58	1
	Contracted Personnel	Contract Employees	1.12	1.23	1.07
Part-time Employees (Hourly Salary)	Part-time Assistant, Teaching Assistant, Work-Study Student, and Temporary Staff		1	1	1
Minimum Statutory Wage (Basic Working Hours)			25250(168)	26400(176)	27470(183)

*Unit: NT$

• Gender Equality

The workplace gender and equality responsibilities of Taipei Tech are fully demonstrated in the composition of its committees. To ensure substantive gender equality, the University follows the relevant guidelines for committee composition, ensuring that no gender proportion is below one-third. This principle allows for representation from all genders, enabling them to express opinions from different perspectives. It also ensures that individuals of all genders can equally participate in the decision-making process in each committee, promoting gender equality in decision-making participation.

- Structure of the Gender Equal Education Committee



The follow-up handling process and results of gender equality complaint cases

I. Investigations of gender-related cases are divided into two types: Complaint-based investigation (filed by the victim or legal representative), Report-based investigation (filed by any person). Relevant procedures follow the Gender Equity Education Act, NTUT Regulations for the Prevention of Campus Gender Incidents, NTUT Sexual Harassment Complaint and Investigation Guidelines, and NTUT Gender Equality Education Implementation Regulations.

II. Once a campus gender-related incident is confirmed through investigation by the school or competent authority, the perpetrator shall be subject to appropriate disciplinary actions in accordance with relevant laws or regulations. These may include admonition, demerit, dismissal, suspension, non-renewal of appointment, removal from office, termination of contract, termination of service, or other suitable penalties. When sanctioning gender-related incidents on campus, the University, competent authorities, or other authorities in charge shall order the perpetrator to undergo psychological counseling and guidance, and may order him/her to take one or more of the following measures. However, individuals who are permanently prohibited from being hired, employed, or engaged are not subject to this limitation:

(I) With the consent of the victim, their legal guardian, or actual caregiver, an apology shall be made to the victim. When the consent of the legal guardian or actual caregiver is obtained, the best interests of the child or adolescent should be the primary consideration, and the individual's level of mental maturity should be taken into account when weighing their opinion.

(II) Completion of eight hours of gender equality education-related courses is required.

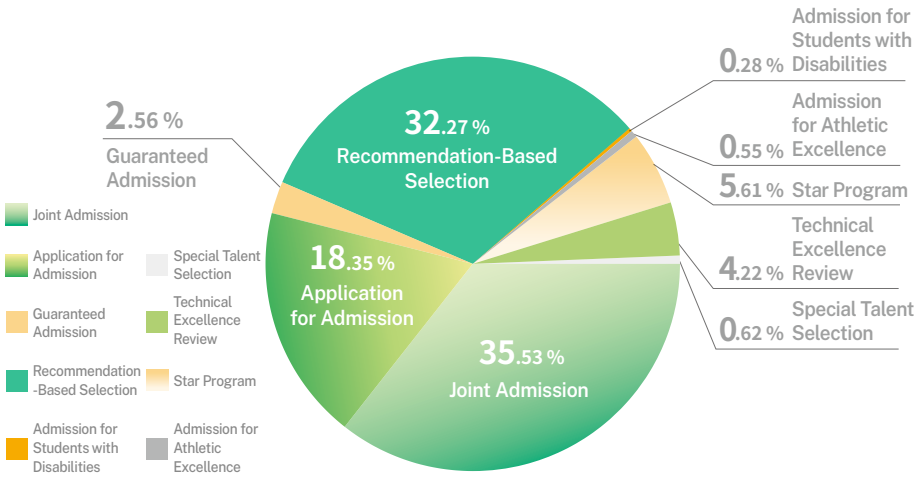
• Number of Gender Equality Complaint Cases in the Past Three Years

Year	2022	2023	2024
Number of cases	23	25	7
Status of disposal	7	17	7

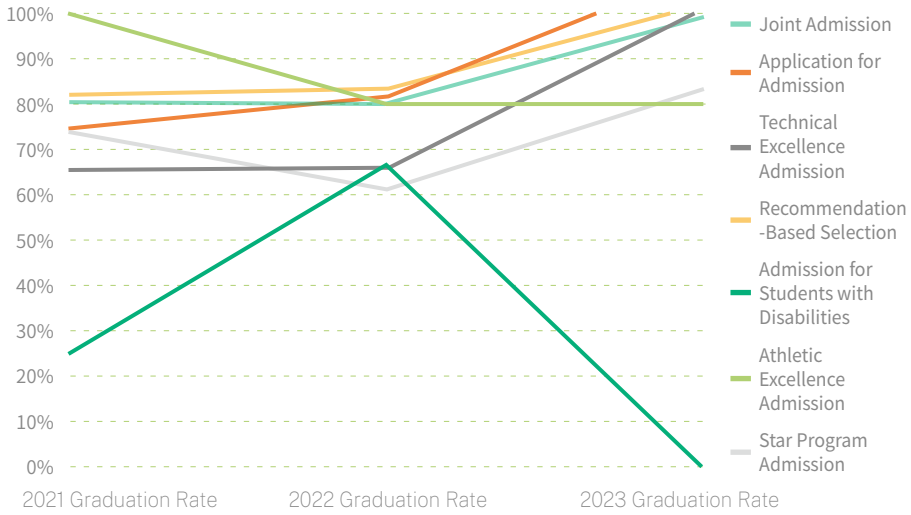
• Diversified Admission Programs

The Day Division of the University offers nine admission channels, aiming to provide diverse and fair access to higher education opportunities that cater to the learning needs of different groups. Among them, applications and recommendation-based admissions consider exam results, high school academic performance, and professional achievements. The "Technical Excellence Star Program" adopts a non-grouped admission model to bridge urban-rural gaps and professional limitations, thereby safeguarding the right of outstanding vocational high school students to access higher education. Additionally, to cultivate talents with diverse competencies, pathways such as guaranteed admission for technical talent, competitive technical reviews, and sports excellence are offered to support students with special skills and potential. In recent years, admission results across these channels have remained stable, demonstrating the effectiveness of the University's diversified enrollment strategies in addressing the needs of various student groups. Over the past four years, graduation rates across different admission channels – including joint admissions, individual applications, technical talent admissions, recommendation-based selection, and the Technical Excellence Star Program – have significantly increased, reflecting the effectiveness of the University's comprehensive learning support and guidance mechanisms.

• Percentage of New Students by Admission Channel in 2024 (%)



• Graduation Rate by Admission Channel (Academic Years 2022–2024)



• Improve the Assistance Mechanism for Disadvantaged Students

The University integrates various subsidy resources. In addition to providing tuition and fee waivers for economically disadvantaged students, it also offers learning-based living stipends and work-study grants. Furthermore, the University actively secures various scholarships to ease students' financial burdens and help them focus on their studies.

• Performance of Student Assistance

Comprehensive Life Assistance

Item	2024 Implementation Status
Tuition and fee waivers	714 students were subsidized in the 2023-2 semester with a total of NT$13,532,689; 729 students were subsidized in the 2024-1 semester with a total of NT$13,556,510. Total of 1,443 recipients, totaling NT$27,089,199.
Financial aid for underprivileged students	182 students subsidized, totaling NT$3,051,500.
Living fellowship	138 students subsidized, totaling NT$7,434,000.
Accommodation reduction or waivers	50 students subsidized, totaling NT$490,000.
Student loans	1,361 applicants in 2023-1 semester, NT$40,238,458 1,240 applicants in 2023-2 semester, NT$34,540,398 Total of 2,601 applicants in 2024, amounting to NT$74,778,856.
Off-campus rent subsidy	From 2024, applications handled by the Construction and Planning Agency, Ministry of the Interior.
Emergency aid	“Ministry of Education School Property Fund” subsidized 11 cases, totaling NT$210,000. “NTUT Emergency Relief Fund” subsidized 31 cases, totaling NT$515,000.

Diversification of Learning Awards

Item	2024 Implementation Status
The “Grateful” Scholarship	A total of NT$163,000 was raised; the remaining balance is NT$5.05 million, reserved to support disadvantaged students unable to pursue studies due to financial hardship.
The “Jade” Scholarship	A total of 90 recipients were awarded, totaling NT$4.5 million.
The “Zhuo Yu” Grant	A total of 810 recipients were awarded, totaling NT$10,060,698.

Guidance and Counseling Digitalization

Item	2024 Implementation Status
Online consultation appointment	522 appointments were made for “initial interviews”; 3,236 counseling sessions were booked.
Tertiary prevention counseling	• “Mental Health Promotion Activities” were held 46 times, with 3,406 participants. • “Freshman High-Risk Screening” involved 2,794 students, with a screening rate of 17.4%. • “Psychiatric Consultation” served a total of 50 individuals.
Mentor guidance	• “University-Wide Mentor and Teacher Meetings” were held twice, with 653 participants. • “Mentor and Teacher Counseling Skills Workshops” were held 11 times, with 715 total participants.
Peer mentoring	• “Learning Assistance for Indigenous Students” supported 22 students. • 64 indigenous students applied for various internal and external scholarships. • “Indigenous Student Scholarships from the Indigenous Affairs Committee” were awarded to 28 students, totaling NT$696,000.
Career counseling	• “Special Education Career Counseling Activities” were held 10 times, with 66 participants. • “Individualized Transition Plans (Career Counseling) for Special Education” served 221 participants. • “Special Education Career Follow-Up for Students on Leave or Graduates” involved 45 participants.
Club guidance	768 “Character Education Student Activities” were conducted, with a total of 35,834 participants (34,306 on campus, 1,528 off campus).
Homework guidance (Safe Learning Program)	A total of 81 students received academic support scholarships, totaling NT$162,000.

• Credit Reduction Regulations

I. According to Article 2, Paragraph 4 of the NTUT Course Selection Regulations, students with disabilities, those admitted through the Ministry of Education's designated athletic performance programs, and those admitted through technical excellence recommendations or screening may take a minimum of 6 credits per semester. The number of students who have completed the credit class and satisfied the requirements referred to above is as follows: 2022 Academic Year: 30 students; 2023 Academic Year: 11 students; 2024 Academic Year: 20 students.

II. According to Article 2, Paragraph 7 of the same regulations: "Students encountering special circumstances (such as major personal injury or illness) may apply with supporting documents to reduce 3 to 6 credits per semester upon approval by the department head and the Dean of Academic Affairs. However, first-to third-year students must take at least 9 credits. Fourth-year students who have completed all required courses and credits may apply for credit reduction with the department head's approval but must still take at least one course per semester." The number of students who had credit reductions due to major personal injury or illness: 2022 Academic Year: 1 student; 2023 Academic Year: 3 students; 2024 Academic Year: 0 students.

• Foreign Language Test Subsidies for Students with Disabilities

- NTUT provides the following support measures for the English and other foreign language learning of disadvantaged students:

Flexible English Credits and Graduation Requirements

In accordance with the spirit of the Special Education Act, NTUT offers a series of "English Special Classes" for students with disabilities to support adaptive learning. These classes help students flexibly complete required English courses and meet graduation thresholds. In 2024, a total of 5 English Special Classes were offered, with 16 enrollments successfully passing the courses.

Subsidies for External Language Proficiency Exams

Subsidies for external language test registration fees are provided for students from low-income, lower-middle-income households, and students with disabilities.

Students may apply by submitting relevant documentation and original payment receipts. Each student may apply for a maximum of two subsidies, with a cap of NT$4,000 per instance. In the 2021 academic year, there were 2 students, both of whom were beneficiaries from lower-middle-income households. In the 2022 academic year, there was 1 student, a beneficiary from a lower-middle-income household. In the 2023 academic year, no students applied. In the 2024 academic year, 1 student applied, who was the child of a person with a disability.

Foreign Language Ability Test Award

In order to encourage students of all academic programs to enhance their foreign language proficiency and reward those who take language proficiency tests during their studies, students who meet the standards for various award levels may apply for registration fee subsidies. For students from low-income, lower-middle-income households, and those with disabilities, if they pass any of the designated foreign language proficiency tests outlined in the regulations, they may apply for a subsidy for the actual registration fee. The maximum subsidy is NT$4,000, limited to one application per student and cannot be claimed more than once. Recognized language tests include: TOEFL iBT, IELTS, TOEIC, Cambridge English, JLPT, TestDaF, and DELF/DALF. In the 2020 academic year, 3 students applied; in 2021, 2 students; in 2022, 4 students; in 2023, no students applied. In the 2024 academic year, 12 students successfully applied, including 3 from low- and lower-middle-income households, 4 children of persons with disabilities, 2 indigenous students, and 3 children of new immigrants.

• Interview Travel Subsidy

To encourage students from economically or culturally disadvantaged families to apply to the university, NTUT has established the "Guidelines for Subsidizing Student Travel Expenses for Participation in Admission Activities." This subsidy aims to assist such students in covering transportation and accommodation costs for interviews, written exams, and summer courses post-admission, thereby reducing their financial burden and motivating them to pursue admission.

Since the program's inception, the subsidy amount has increased from NT$58,000 to NT$140,000. Due to the COVID-19 pandemic in 2021–2022, NTUT suspended on-campus interviews, mock interviews, and admissions briefings to reduce transportation-related risks for students. As the pandemic subsided, 36 economically disadvantaged students participated in second-stage interviews in 2023, with NT$42,641 in subsidies distributed.

In 2024, the program expanded again, benefiting 16 students with total disbursements of NT$44,071, further assisting them in completing interviews and meeting admission course requirements.

Cho-Yu Project

To secure additional educational resources for economically and culturally disadvantaged students, NTUT actively seeks support through the Ministry of Education's "Higher Education Sprout Project." This initiative aligns with the Ministry's "Support Program for Disadvantaged Students in Colleges and Universities," under which special admission quotas are allocated through appropriate recruitment channels and preferential scoring conditions are specified in admission guidelines to support students' access to education. In addition, subsidies are provided for application fees, transportation, and accommodation for university entrance interviews, yielding excellent results.

Course learning and educational support mechanisms are central to assisting students from disadvantaged backgrounds. NTUT has established a single service window and dedicated website that consolidates information on financial aid and counseling resources. This integrated system offers students comprehensive support, including scholarships and grants to ease their financial burdens and allow them to focus on their studies.

The project includes a variety of support programs in areas such as academics, certification, international exchange, competition, and career development. These initiatives aim to help economically or culturally disadvantaged students balance academic pursuits with daily living needs while increasing their participation in educational and counseling support services. In the 2024 academic year, the program served a total of 621 students.

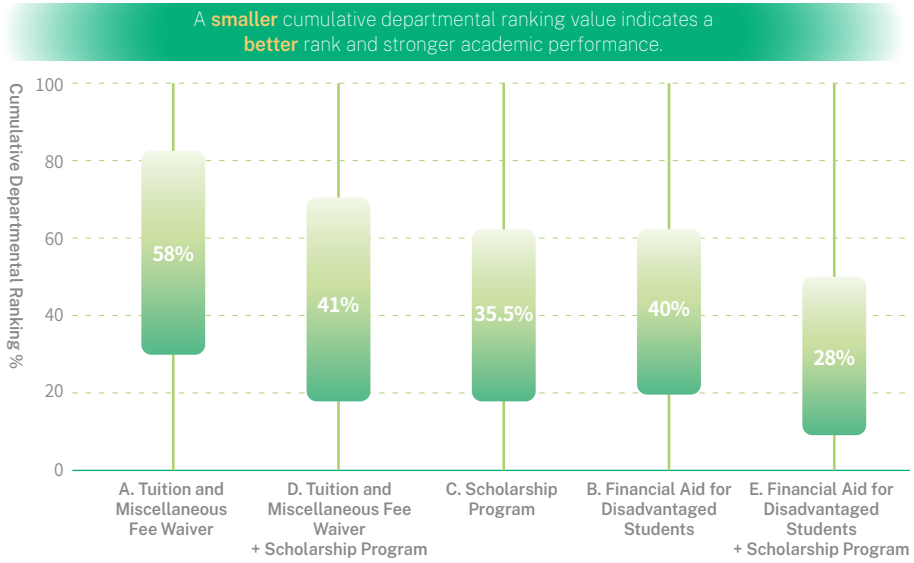
- Status of the Cho-Yu Project in the Last Three Years

Year	2022	2023	2024
Number of people benefited	1,023	640	810
Number of people benefited	453	422	621
Sponsored funds (NTD)	10,876,280	9,801,670	10,060,698

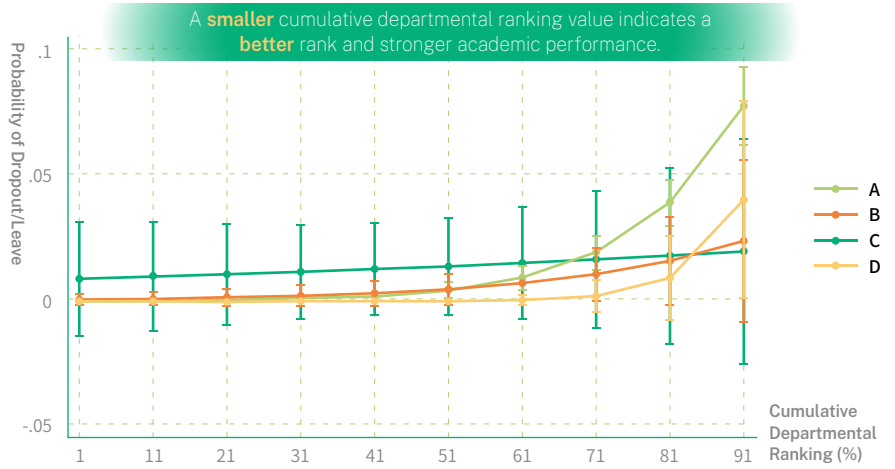
Learning Outcomes of Cho-Yu Students

Based on an analysis of counseling and support effectiveness for economically or culturally disadvantaged students from academic years 2018 to 2023 (107 to 112), results show that students who simultaneously participated in the Cho-Yu Project demonstrated significant academic improvement. The program also contributed to reducing instances of withdrawal and leave of absence.

- Distribution of Academic Performance by Type of Subsidy (AY 2018–2023)



- Dropout and Leave of Absence Rates for Economically or Culturally Disadvantaged Students



• Listening to Campus Voices

Meeting with the President

Since 2019, the university has promoted the “Meeting with the President” sessions. The Student Association takes the initiative to collect student feedback, and through monthly meetings with the president, ensures full communication with administrative units to eliminate student backlash caused by misunderstandings when new measures are introduced. These sessions allow for a deeper understanding of students’ views and opinions regarding the university’s current status and serve as references for refining administrative policies. Since 2022, a total of 21 sessions have been held (as of March 2025).

End-of-Semester Forums

To establish smooth communication channels with faculty and staff, the university holds end-of-semester forums between the president and faculty as well as between the president and staff. These sessions provide platforms for expressing demands and opinions. In 2024, a total of four such forums were held.

Employee Assistance Program (EAP)

NTUT has established the “National Taipei University of Technology Employee Assistance Program” and created an “Employee Assistance Program” section on the Human Resources Office homepage. An annual “Needs Survey” is conducted to identify the top concerns related to work, life, and health among staff. Based on the results, special lectures are organized, followed by “Satisfaction Surveys” to guide future planning. Over the past three years, a total of 648 people have attended these lectures: 154 in 2022, 212 in 2023, and 282 in 2024. Participation has increased yearly, reflecting alignment with staff needs. Additionally, an “Overall Satisfaction Survey” is conducted annually to collect staff feedback, and satisfaction levels have shown a steady upward trend over the past three years.

To improve the quality of psychological counseling services for faculty and staff, a dedicated “Employee Counseling Room” was established in 2022, along with an “Online Appointment System for Employee Psychological Counseling.” After booking online, appointments are confidentially arranged with a licensed counselor employed by the university, ensuring privacy, professionalism, and scheduling flexibility.

Overall satisfaction with employee assistance programs

Very satisfied	Satisfied	Acceptable	Dissatisfied	Very dissatisfied
59%	23%	9%	7%	2%

Labor–Management Meeting

The school’s employees governed by the Labor Standards Act may elect labor representatives. Starting from the 2024 term, in addition to the original contract employees and technical workers, full-time assistants supporting university-wide operations were also included as eligible voters in the election. Labor–management meetings are held regularly with employer representatives to engage in discussions. This mechanism of communication and interaction promotes labor–management cooperation, enhances communication within the university, reduces conflicts, and helps both parties build consensus.

From 2021 to 2024, a total of 16 labor–management meetings were convened. Labor representatives raised various labor rights-related issues (such as working hours, overtime, special leave, pension contributions, optimizing the salary payment schedule, language proficiency considerations in hiring and promotion, and expanding the dedicated webpage section for affiliated stores). These issues were discussed and resolved through negotiation, resulting in mutual agreement.

3-2 Talent Cultivation and Retention

• Management Approach

Talent attraction & retention			
Policies/ Commitments	Committed to creating a fair and diverse campus environment, complying with legal requirements, ensuring non-discriminatory treatment of employees, continuously training talent, and promoting professional development. Establish incentive systems to continuously attract and retain outstanding talent.		
Responsible Unit	HR Office, Office of Academic Affairs, Office of Research and Development, Office of Student Affairs, Environmental Health and Safety Center		
	Goals and Actions		**Evaluation Mechanism**
Short-term (2 years)	1. Ensure that the salary structure complies with regulations, review overtime data, disclose recruitment information, and hold 4 sustainable development training sessions. 2. Establish and promote a flexible salary incentive system; set up a review mechanism and make annual adjustments based on faculty feedback.	3. Implement and promote faculty promotion and evaluation regulations based on the new system.	• Compliance of salary structure with regulations and participation rate in sustainable development training • Amount and number of recipients of teaching performance bonuses • Promotion and evaluation results
Mid-term (4 years)	1. Ensure there is no gender pay gap; establish a multi-stage selection mechanism; hold 5 sustainable development training sessions. 2. Promote the flexible salary system, revise evaluation items and criteria, ensure linkage with academic performance, and optimize the distribution process.	3. Continuously revise and implement the teacher promotion and evaluation system according to the new framework.	• Gender pay gap and work hour analysis • Effectiveness of the flexible salary system • Approval rate of promotion and evaluation
Long-term (8 years)	1. Continue to analyze the salary structure and organize 6 sessions of sustainable development training. 2. Optimize the flexible salary incentive program, build a multi-tiered compensation system, and adjust standards based on feedback to maintain fair resource allocation.	3. Reform the teacher promotion and evaluation system in line with institutional development needs.	• Internal promotion ratio and employee retention rate • Effectiveness of the teaching pop-up reward plan • Effectiveness of the promotion and evaluation system
Corresponding Standards	GRI	• GRI 2 General Disclosures 2021 • GRI 401 Employment and labor relations • GRI 403 Occupational Safety and Health	• GRI 404 Training and Education • GRI 405 Diversity and Equal Opportunity
	SDGs		
	STARS	• EN 7: Employee Educators Program • EN 8: Employee Orientation • EN 9: Staff Professional Development and Training	• PA12: Employee Compensation • PA13: Assessing Employee Satisfaction

· Number and percentage of new teaching staff

Category	Gender	Age	2022	2023	2024
Teachers	Male	Under 30 years old	1	2	1
		31-50 years old	18	19	21
		Over 51 years old	5	8	0
	Female	Under 30 years old	1	0	0
		31-50 years old	14	9	4
		Over 51 years old	1	0	0
	Total number of people (persons)		40	38	26
	Number of employees as of December 31 of the current year		472	487	490
	Rate of new employee hiring (%)		8.47%	7.80%	5.31%
Employees	Male	Under 30 years old	56	55	57
		31-50 years old	46	33	58
		Over 51 years old	5	3	7
	Female	Under 30 years old	67	53	75
		31-50 years old	72	66	59
		Over 51 years old	9	8	13
	Total number of people (persons)		255	218	269
	Number of employees as of December 31 of the current year		704	717	743
	Rate of new employee hiring (%)		36.22%	30.40%	36.2%

Note: New employee hiring rate = Total number of new employees in the year ÷ Number of employees on the last day of the year

· Number and percentage of resigned teaching staff

Category	Gender	Age	2022	2023	2024
Teachers	Male	Under 30 years old	0	0	0
		31-50 years old	4	6	7
		Over 51 years old	15	1	0
	Female	Under 30 years old	4	0	0
		31-50 years old	1	5	2
		Over 51 years old	0	0	0
	Total number of resigned employees		24	12	9
	Number of employees as of December 31 of the current year		472	487	490
	Total turnover rate (%)		5.08%	2.46%	1.84%
Employees	Male	Under 30 years old	48	45	41
		31-50 years old	61	36	33
		Over 51 years old	8	5	2
	Female	Under 30 years old	63	43	44
		31-50 years old	71	53	65
		Over 51 years old	13	8	8
	Total number of resigned employees		264	190	193
	Number of employees as of December 31 of the current year		704	717	743
	Total turnover rate (%)		37.50%	26.50%	25.98%

Note: Turnover rate = total number of resigned employees for the year/number of employees on the last day of the year

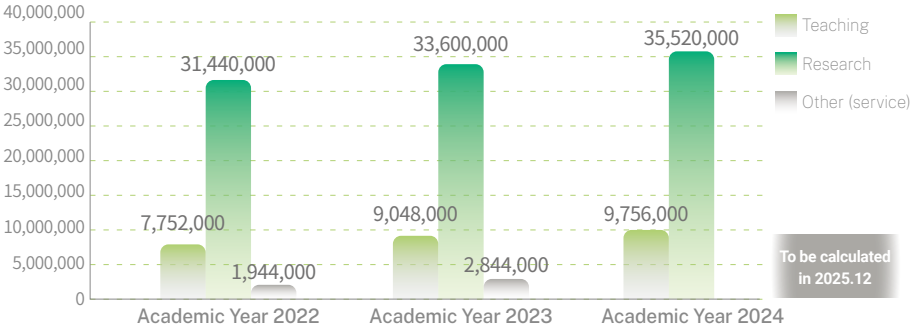
• Flexible Salary Award for Outstanding Teachers

The amount of flexible teaching salary subsidies has increased year by year. From 2022 to 2024, a total of 206 subsidies were granted, with a cumulative amount of NT$26.556 million.

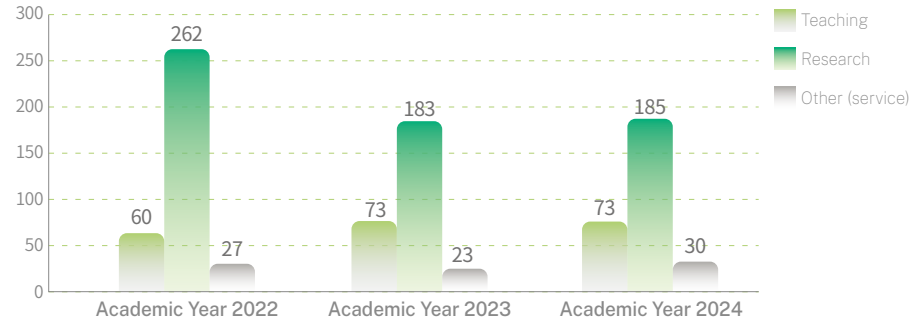
· Overview of Flexible Salary in Academic Year 2024

Total number of recipients	Total subsidy amount	Number of sub-projects implemented
73 people	NT$9,756,000	42 items

· Flexible Salary Amount Approved by the University



· Number of Approvals for Flexible Salary by Category



• Performance evaluation and promotion

Evaluation

The results of faculty evaluations are linked to promotion (teaching, research, service, and counseling), salary increases, and decisions on non-renewal. To safeguard teachers' rights, various support measures have been established for those who fail the evaluation, aimed at improving their performance in teaching, research, service, and counseling to help them pass future evaluations. The most recent evaluation was conducted for academic years 2020–2022, and all evaluated faculty members passed.

Since the 2023 academic year, under the revised evaluation regulations, all teachers (except those subject to the "Regulations for Newly Appointed Faculty with Time-Limited Promotion") are required to undergo evaluation. The performance indicators used in these evaluations are also aligned with the criteria used for faculty promotion, thereby integrating promotion and evaluation mechanisms into a more effective, transparent, and unified faculty assessment system. Additionally, a faculty promotion/evaluation counseling mechanism has been established with participation from relevant departments to improve overall teaching quality.

Promotion

In December 2021 and June 2023, NTUT implemented reforms to its faculty promotion system. The updated promotion system, in effect since the 2022 academic year, has effectively regulated the pass rate, encouraging professional growth among faculty. Key changes include:

(1) Elevating the role of college-level review committees.
(2) Simplifying procedures and reducing review timelines.
(3) Eliminating the external reviewer database.
(4) Raising the passing threshold for external reviews, using both a scoring and grading system.
(5) Easing submission rules for reference works and allowing non-specialty works.
(6) Introducing promotion pathways through teaching practice research.
(7) Reforming how external review discrepancies are handled.

The above-mentioned revision of the promotion system at NTUT aims to effectively and systematically review faculty performance, ensuring that the promotion review process aligns with the characteristics of each academic field and the overall development strategy of the university.

Since November 2004, NTUT has established the "Regulations for Newly Hired Teachers to be Promoted within a Time-Limit" to encourage timely promotion and improve the structure of its faculty. The policy has undergone multiple amendments, with promotion counseling regulations added in 2018 to provide relevant support resources for faculty seeking promotion. Since its implementation, the system has played a positive role in maintaining and enhancing faculty quality, boosting academic research performance such as journal publications, and strengthening industry–academia collaboration, thereby effectively improving the overall quality of the university's faculty.

Additionally, starting in December 2024, the university established a Teacher Qualification Review Promotion Task Force in accordance with the Ministry of Education's "Key Points for the Self-Evaluation and Counseling of Faculty Qualifications at Junior College Level and Above." This task force will be responsible for promoting the relevant regulations and operational mechanisms for faculty qualification reviews, continuously refining the promotion support system, and integrating the faculty promotion and evaluation processes to further enhance the qualification review operations.

・Number of teachers promotions (persons)

Category	Promotion level	Academic Year 2022 (including projects)		Academic Year 2023 (including projects)		Academic Year 2022 (including projects)	
		Fall Semester	Spring Semester	Fall Semester	Spring Semester	Fall Semester	Spring Semester
Teachers	Assistant Professor	-	-	-	-	-	-
	Associate Professor	7	7	7	3	4	7
	Professor	8	4	1	7	7	8
Total		26		18		26	

・Number of employees transferred (persons)

Category	Promotion category		Academic Year 2022	Academic Year 2023	Academic Year 2024
Employees	Endowment Fund Appointed Personnel	Administrative category	3	3	2
		Technology category	0	2	2
	Official staff		2	2	3

Employee Benefits and Rights

In order to take care of the lives of our colleagues and provide them with psychological support services, we provide various living allowances and subsidies according to the Central Personnel Act and offer them physical and mental support services based on our employee assistance program.

・Childbirth support

Item	Description
Weddings, Funerals, Maternity, and Childcare Parental Leave Without Pay	When faculty or staff at NTUT experience life events such as marriage, bereavement, or childbirth, the Human Resources Office assists in applying for relevant living allowances and subsidies. For labor employees, the HR Office also handles applications for childbirth subsidies under the Labor Insurance system.
	The university actively provides support and care for employees on parental leave without pay by assisting with the continuation of Public Service Insurance, Labor Insurance, and National Health Insurance coverage. It also supports applications for unpaid parental leave subsidies under both Public Service Insurance and Labor Insurance, helping to ensure financial stability during the leave period. Employees are guaranteed reinstatement to their original position and salary upon return from leave.
	NTUT offers semester-based education subsidies for children of faculty and administrative staff.
	To ease the childcare burden on employees and enhance their capacity to care for their children, the university has signed agreements with one childcare center and two national chain childcare and after-school service providers, totaling 94 service locations. Faculty and staff may select a care location based on convenience. Each year, the university continues to explore new vendors and establish cooperative agreements to protect parenting rights and foster a happy and safe work environment.

・Parental Leave Without Pay

Year	Number of employees entitled to parental leave without pay			Number of employees applying for unpaid parental leave			Number of employees reinstated after parental leave without pay			Number of employees still in service 12 months after reinstatement			Reinstatement rate	Retention rate
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total		
2022	2	16	18	1	16	17	1	12	13	1	12	13	76.47%	76.47%
2023	4	6	10	1	12	13	1	8	9	1	3	4	69.23%	30.77%
2024	4	13	17	1	12	13	0	5	5 *Note 2	0	0	0 *Note 1	38.46%	0%

*Note 1: Five individuals who have returned to work have not yet completed 12 months of service since resuming their duties; therefore, they are not included in the calculation of those who remained employed for 12 months after returning.

*Note 2: Seven of them are still on unpaid parental leave, so the number of employees who have completed the parental leave and resumed work cannot be calculated.

Note: The number of employees on unpaid parental leave is based on those who took maternity leave, paternity leave, prenatal check-up leave, and parental leave during the current year. However, the count of those on unpaid parental leave includes individuals whose leave periods span across different years, resulting in a figure higher than the number of employees who applied for parental leave within the current year alone.

・Employee Welfare

Cultural and Recreational Activities

To promote healthy leisure for faculty and staff, inspire morale, and foster team spirit, the University organizes various recreational activities, including clubs, fitness competitions, birthday celebrations, and departmental gatherings. Faculty and Staff Clubs A total of 13 clubs, including badminton, table tennis, tennis, basketball, slow-pitch softball, hiking, aerobic dance, tai chi, tai chi push hands, Red Mansion Choir, Bible study, and the Buddhist Compassion Relief Merit Society (Fu Chi Association). An annual university sports day is held, during which exclusive sports caps and apparel are provided for employees. Birthday cards and gift certificates are distributed to faculty and staff on their birthdays, and department-level gatherings are organized to strengthen camaraderie.

Health Checkup

Faculty and staff aged 40 and above are eligible for a health checkup subsidy of NT$4,500 every two years. Those under 40, including labor employees, may participate in the University's annual general health checkup. Contracted physicians also provide regular on-campus medical consultation services.

Mental Health

Psychological counseling sessions are offered annually to all faculty and staff.

Hospitalization Condolence

Employees hospitalized due to illness may receive a subsidy of up to NT$1,000.

Breastfeeding Room

A breastfeeding (lactation) room is available within the Health and Wellness Division of the Office of Student Affairs. It is open to staff, students, and campus visitors. Breastfeeding time is counted as part of working hours.

Insurance and Loan Consultation

Group accident insurance plans (e.g. through Cathay Life Insurance), public sector emergency loan consultations, and other benefits are available to faculty and staff.

- Insurance: Public Insurance, National Health Insurance, Labor Insurance

1. To ensure stability in life for public servants, the University handles public service insurance and National Health Insurance. In the event of disability, retirement, death, family funeral, childbirth, or unpaid parental leave, assistance is provided for claims under the public service insurance.

2. For employees covered under the Labor Standards Act, the University provides Labor Insurance (including regular and occupational accident insurance) and National Health Insurance. Support is offered in claiming benefits for medical treatment, maternity, injury, illness, disability, or death.

3. During the effective period of the national health insurance, the University pays insurance benefits to the insured in the event of a disease, injury, or maternity accident in accordance with the provisions of the Act.

- Pensions and Retirement Benefits

1. To ensure reasonable retirement income and encourage long-term service, the University and the government jointly contribute to the Civil Servant and Teacher Pension Fund. Employees contribute 35%, while the government covers the remaining 65%. Upon retirement, the employee may claim their pension.

2. For labor employees under the Labor Standards Act (including nationals, spouses from foreign countries or Mainland China, and permanent residents), the University contributes no less than 6% of monthly salary to the individual labor pension accounts managed by the Bureau of Labor Insurance. These accounts are owned by the employees, who may also voluntarily contribute up to an additional 6%.

• Diverse Courses to Provide Continuing Education

According to the University's Education and Training Implementation Plan, each employee must complete a minimum of 20 learning hours per year:

I. Learning Hour Requirements:

(I) Statutory Training Hours (10 hours):

- Current major government policies (1 hour).
- Environmental education (4 hours).
- Democratic governance value courses (5 hours), including: Gender mainstreaming, Integrity and service ethics, Human rights education, Transitional justice, Administrative neutrality, Multiculturalism, Civic participation.

(II) Job-Related Training Hours (10 hours):

- Information security (3 hours).
- Other job-related training (7 hours).

II. To help new hires quickly become familiar with the principles and practices of official document writing, they are required to complete a 6-hour online course on official writing offered by the National Academy of Civil Servants via the e-Government Learning Platform within three months of their start date (or during the probationary period).

III. Implementation Methods:

(I) In-Person Courses: Conducted as lectures or hands-on training depending on course content and training needs.

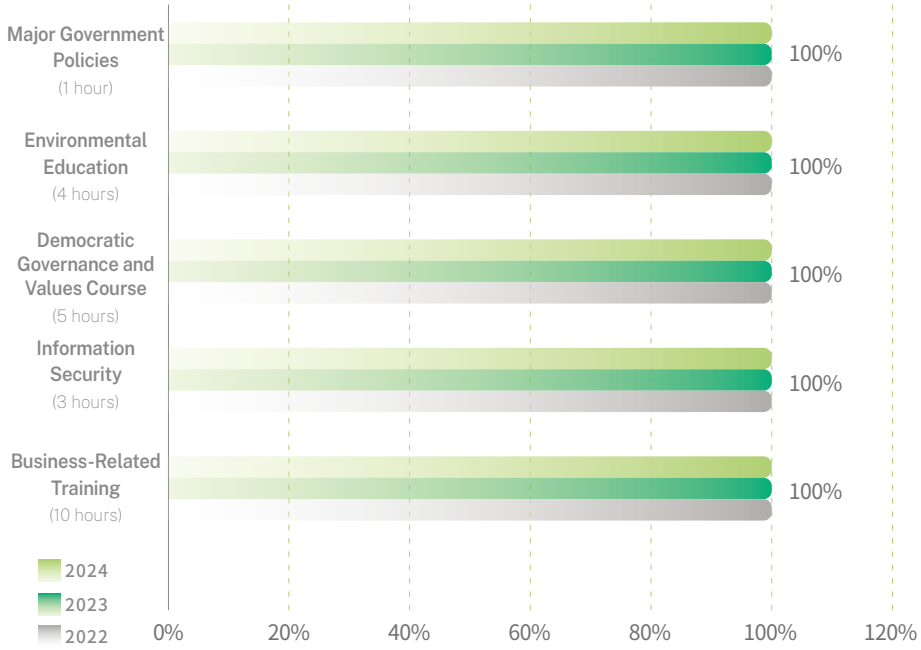
(II) Online Courses: Staff are required to complete designated digital learning courses (e.g. online official document writing for new employees) and are encouraged to take advantage of platforms like Taipei e-Campus or e-Government Learning+ Platform during personal time.

(III) External Courses: Staff may also be nominated to attend training programs offered by the Directorate-General of Personnel Administration, the Ministry of Education, or other authorized training institutions.

- Summary Table of Publicly Funded Training

Year	Total Trainees (Publicly Funded)	Total Training Hours	Total Training Cost (NT$)
2022	33	346	86,080
2023	24	230	68,500
2024	60	954	573,180

· Average Completion Rate of Staff Learning Hours



· Employee Learning Hour Statistics

Position	Managerial staff			Non-managerial staff		
Year	Total Learning Hours	Total Number of People	Average Learning Hours	Total Learning Hours	Total Number of People	Average Learning Hours
2022	825	14	59	10,173	263	39
2023	673	12	56	12,116	272	44
2024	787	11	72	11,348	270	42

• Student Cultivation Mechanism

To assist incoming students from diverse backgrounds in transitioning to university-level coursework and strengthening foundational subjects, the University offers pre-college preparatory courses during the summer before enrollment. These courses are designed to help newly admitted students build foundational knowledge in their disciplines. In addition, English and Mathematics remedial courses are offered for students admitted through the Stars Program, Technical Excellence, and Sports Excellence admissions to strengthen their fundamental academic abilities. To retain and cultivate outstanding students, the University has established various mechanisms for student retention and academic incentives. To encourage exceptional undergraduates to pursue master's studies at the University and promote continuous learning while shortening the duration of study, the "Regulations for the Bachelor-Master Integrated Program" have been implemented. Students with strong academic performance may apply within the designated period to qualify as prospective master's students. Additionally, a mechanism allows undergraduate and master's students to directly pursue doctoral degrees. Students who have completed the required years of study with outstanding performance and research potential may apply for direct admission to the Ph.D. program upon departmental recommendation and presidential approval.

The number of undergraduate students approved for the integrated bachelor-master program in recent years is as follows: In Academic Year 2021: 173 students passed, with a retention rate of 74%. In Academic Year 2023: 143 students passed; the retention rate will be accurately calculated after this cohort begins graduate studies in 2025. In Academic Year 2024 (as of March): 70 students have been approved, with additional applications expected in May 2025 for second-semester third-year students. For the direct Ph.D. admission mechanism, a total of 28 students were approved over the past three years (8 students in Academic Year 2022; 6 students in Academic Year 2023; 14 students in Academic Year 2024).

The University also encourages and recognizes students who set personal learning goals, develop diverse talents, and demonstrate strong character and leadership. Since Academic Year 2018, an Honor Student Award has been established. Awardees admitted to the University's master's programs receive full tuition and fee waivers for the first two academic years. This waiver excludes housing fees, computer/network (internship) fees, and accident insurance. Students eligible for low-income tuition waivers may apply to receive a scholarship equivalent to the waived amount. No students met the eligibility criteria over the past three years.

· Retention Incentive Mechanism

Master's Program Enrollment	Ph.D. Program Enrollment
Undergraduate students who graduate in the top 25% of their department/class and continue into the University's full-time master's program may receive a scholarship of either NT$100,000 or NT$50,000 for the academic year.	New students directly admitted to the Ph.D. program who pass the review process may receive a full tuition and miscellaneous fee waiver plus a scholarship of NT$120,000, or a half waiver with a scholarship of NT$60,000.

· Number of students in the Master's Program

Academic Year	Applicants Approved	Students Enrolled	Retention Rate
2021	173	121	70.00%
2022	133	98	74.00%
2023	143	56	To be calculated after the entry in 2025
2024	70	32	To be calculated after the entry in 2026

• Career Development and Industry Internship

Career Counseling Support: To establish a strategic approach for career guidance, first-year students undergo the UCAN competency assessment and results analysis as part of the "Introduction to University" course at the beginning of their studies. This initial assessment evaluates their job knowledge and competency orientation, while also promoting the University's career counseling policies and initiatives to enhance the effectiveness of freshman class guidance. A career counseling appointment platform has been set up to offer more personalized consultation services. This platform supports one-on-one career assessments, encouraging students to independently explore their interests and prepare more proactively for future employment, shifting from passive to proactive guidance.

Integration with Career Development Courses: Career development materials for higher education are embedded into four designated courses during the academic year, including: "Introduction to University": Focuses on pre-employment planning and engineering ethics. "Career Development and Choice" and "Workplace Ethics": Address professional conduct, social responsibility, and communication skills. Capstone and professional courses: Feature alumni talks and discussions of social issues to cultivate professionalism, observation, and applied academic and technical competencies.

Multi-domain Exploration / Self-advantage Activities: A series of career development activities encourages student participation in enterprise briefings, career seminars, company visits, and internships. These initiatives broaden program outreach and aim to gain departmental support. Industry professionals are invited to serve as mock interviewers, providing one-on-one coaching on interview skills and resume writing, to better prepare students for the workforce and enhance their individual strengths and competitiveness. These activities aim to help students connect with industry trends, understand labor rights, learn from experienced professionals, and create opportunities to showcase their strengths.

· Student Career Development Activities

Item	Handling Status
Career Exploration	• 33 sessions • 33 freshman classes in total
Career Lecture	• 18 sessions • 1,377 participants (person-times)
Career counseling	• 60 participants completed counseling
Job Fair	• 180 participating companies • 4,100 student participants • 48 company recruitment briefings

Off-Campus Internship

To implement the University's core philosophy as a practice-oriented research institution, since the 2012 academic year, all full-time undergraduate students are required to complete a 2-credit off-campus internship course. This aims to cultivate students' practical skills and reduce the gap between academia and industry. The University also offers a professional elective course titled "Off-Campus Practical Research" to encourage graduate students to undertake internships relevant to their research. This system not only enhances students' practical competencies but also strengthens NTUT's role as a training ground for future entrepreneurs, a hub for technically proficient research talent, and a trusted partner for industry–academia R&D collaboration, especially for small and medium-sized enterprises.

· Internship Implementation Overview

Partner Institutions	793
Participating Students	1397(persons)

Graduate destination survey

To monitor graduates' learning outcomes and understand their post-graduation development, NTUT conducts annual surveys in coordination with the Ministry of Education's "Higher Education Graduate Tracking Project," utilizing NTUT's own "Graduate Destination Survey System" to assess career development and collect alumni feedback.

2024 Survey – One Year After Graduation (2022 Graduates)							
Category	Continuing Education	Employment	Military Service	Examinations	Others	Questionnaire return rate	Employment rate
Tracking Percentage	24.32%	69.68%	0.40%	3.66%	1.94%	81.1%	97.31%

2024 Survey – Three Years After Graduation (2020 Graduates)							
Category	Continuing Education	Employment	Military Service	Examinations	Others	Questionnaire return rate	Employment rate
Tracking Percentage	3.91%	91.46%	0.42%	2.14%	2.07%	75.64%	97.8%

2024 Survey – Five Years After Graduation (2018 Graduates)							
Category	Continuing Education	Employment	Military Service	Examinations	Others	Questionnaire return rate	Employment rate
Tracking Percentage	1.88%	95.16%	0.04%	1.93%	0.99%	69.5%	98.97%

Note: Employment rate = (Number of individuals in full-time employment + military service) / (Number of individuals in full-time employment + military service + others/unemployed)

3-3 Campus Safety and Health

The University's Occupational Safety, Health and Environmental Protection Committee is the highest decision-making body responsible for campus safety and health. The President serves as the Chair of the Committee, while the three Vice Presidents act as Vice Chairs. Members include designated representatives such as college deans, heads of departments that oversee high-risk teaching, internship, laboratory, or research activities, first-level administrative supervisors, and other relevant personnel. Additionally, selected members are appointed through faculty and staff recommendation. The Committee convenes every three months to establish management policies and oversee the implementation of the University's occupational safety and health programs. To ensure a safe and healthy campus environment, the University develops an Annual Safety and Health Management Plan, which is implemented by each unit in accordance with its responsibilities. This plan aims to protect the safety and health of students, faculty and staff, visitors, and contractors, and to prevent occupational accidents. In addition to regular inspections of safety facilities, the University also conducts periodic health and safety training courses to reinforce the effectiveness of its safety management system. According to the 2024 evaluation by the Ministry of Education on campus environmental management and implementation effectiveness in universities and colleges, the University's occupational safety and health practices were rated as effective. The University submits monthly reports on occupational accident statistics to the Ministry of Labor in accordance with regulations. No occupational accidents were recorded during the first eleven months of the year. However, in December 2024, a technician from the General Affairs Division suffered a fractured right radius after falling while manually handling recyclables at the recycling site. The injured employee underwent surgery, was hospitalized for two days, and recovered before returning to work. The cause of the accident was identified as improper work procedures and a lack of safety awareness. In response, safety and health training was provided to the relevant unit, and the proper use of tools and personal protective equipment was reinforced.

Promotion Framework of the Safety, Health, and Environmental Protection Committee

• Implementation of Campus Safety and Health Management Plans

Implementation items		Management approach	Implementing unit
Labeling and General Awareness of Hazardous Chemicals	Implement hazard communication program	Per the university's "Hazard Communication Plan"	All units
	Update and Maintain List of Hazardous Substances		
	Other Necessary Disaster Prevention Measures		
Sampling and Measurement Strategies for Hazardous Work Environments	Implement per the university's	"Work Environment Monitoring Plan"	Safety and Health Center, chemical-handling departments, certified environmental testing agencies
Procurement, Contract, and Change Management	Procurement Management	Per the university's "Procurement Safety and Health Management Regulations"	All units
	Contract Management	Per the university's "Contractor Safety and Health Management Regulations"	
Regular Inspections, Key Inspections, Operational Checkpoints, and On-site Patrols	Regular, Key, and Operational Inspections	Per the university's "Self-Inspection Plan"	Safety and Health Center and all units
	Field inspection		
Safety and health education and training	Safety Training for New Faculty, Staff, and Students & On-the-Job Training	Per the university's "Education and Training Implementation Regulations"	Safety and Health Center and all units
	Safety and health training for transferred or reassigned faculty, staff, and students		
	On-the-job occupational safety and health training (statutory retraining)		
	Safety and health training (and in-service training) for faculty, staff, and students involved in special hazardous operations or operating dangerous machinery and equipment		
	First aid personnel training and related in-service training		

Implementation items		Management approach	Implementing unit
Personal Protective Equipment Management	General principles of safety and health protection equipment: when to wear, how to select, how to clean and store, and management of service life	Record-keeping for PPE distribution and storage	Safety and Health Center and all units
Health examinations, health management, and health promotion matters	New employee physical examination	Occupational medicine and occupational care personnel are arranged to conduct health examinations and implement health management	Safety and Health Center and all units
	Regular health checkups for on-job workers		
	Special health examination for on-job workers (including nighttime working and special operations)		
	On-site health service by occupational medicine		
Collection, sharing, and use of safety and health information	Collection of safety and health information	Visit the websites of the Ministry of Labor, Ministry of Education, and other related units to collect information	Safety and Health Center and all units
	Sharing of safety and health information	Publicize through web page	
Emergency Response Measures	First aid and emergency response drills and training	handled in accordance with the "Emergency Response Plan" of the School	Safety and Health Center and all units
	First aid kit and medication		
Investigation, handling, and statistical analysis of occupational accidents, near miss, and physical and mental health incidents	Investigation, handling, and statistical analysis of occupational accidents and other accidents	・The Environmental Safety and Health Center has established and amended the disaster notification and preliminary investigation report form ・The unit where the accident occurred fills out the report and submits it according to the regulations	Safety and Health Center and all units
Other safety and health management measures	Amendment to the Occupational Safety and Health Management Plan	This plan should be reviewed and revised every year and announced for implementation.	Occupational Safety and Health Administrator/Safety and Health Center

• Status of safety and health training and employee health checkups

Safety and health education and training matters

Implementation Status

- A total of 12 sessions of safety and health education and training for new employees were held, with topics including "Healthy Living–Exercise and Diet," "Common Musculoskeletal Disorders and Office Ergonomics Hazard Prevention," and "Understanding Overwork–Overview of Overwork Identification and Case Sharing."
- May 29, 2024–A fire evacuation drill was conducted in the afternoon at the Design Building. A total of 69 faculty, staff, and students participated in the drill. Thirty fire prevention managers from various buildings and relevant units observed the drill. The Taipei City Fire Department's Jinhua Division was invited to guide the use of firefighting equipment and conduct a debrief for faculty, staff, and students of the Chemical Engineering Building.
- June 28 and November 29, 2024–The 2024 safety and health education training for faculty and staff was held in the B1 conference room of the General Studies Building. Mr. Li Yuan-Hao, Senior Occupational Safety Manager of TBI Motion Technology Co., Ltd., was invited to give a lecture on "Safety and Health Cases and Hygiene." A total of 72 faculty and staff members participated.
- September 6, 2024–The 2024 safety and health education training for new graduate students prior to entering laboratories was held at Student Activity Center. A total of 1,437 participants attended.
- September 6, 2024 – The "2024 International Student Safety and Health Education Training" was conducted in the 9th floor conference room of the Administration Building. A total of 50 participants completed the training and passed the test.
- September 19, 2024 – Training on ionizing radiation safety and health was conducted in the International Conference Hall of the Technology Building, followed by an online test. A total of 240 participants completed the training and passed the test.
- September 20, 2024–Training on biosafety in laboratories was conducted in the second lecture hall of the General Studies Building, followed by an online test. A total of 28 participants completed the training and passed the test.
- Fire prevention manager training was commissioned to the China Productivity Center for the replacement and certification renewal of fire prevention managers in various buildings. A total of 18 individuals completed initial training and 7 completed refresher training.
- October 18, 2024–The second fire drill and disaster prevention education training for 2024 was conducted at the Everlight Building, with a total of 136 participants.

Health examinations, health management, and health promotion matters

Implementation Status

- October 23, 2024 – Far Eastern Memorial Hospital was commissioned to conduct the 2024 general health checkup for labor staff on campus. A total of 174 people participated. In line with the Health Promotion Administration's cancer screening initiatives, three types of free cancer screenings (Pap smear, mammography, fecal occult blood test) were offered, with 40 people screened.

- Occupational physician on-campus services were provided 12 times in 2024.

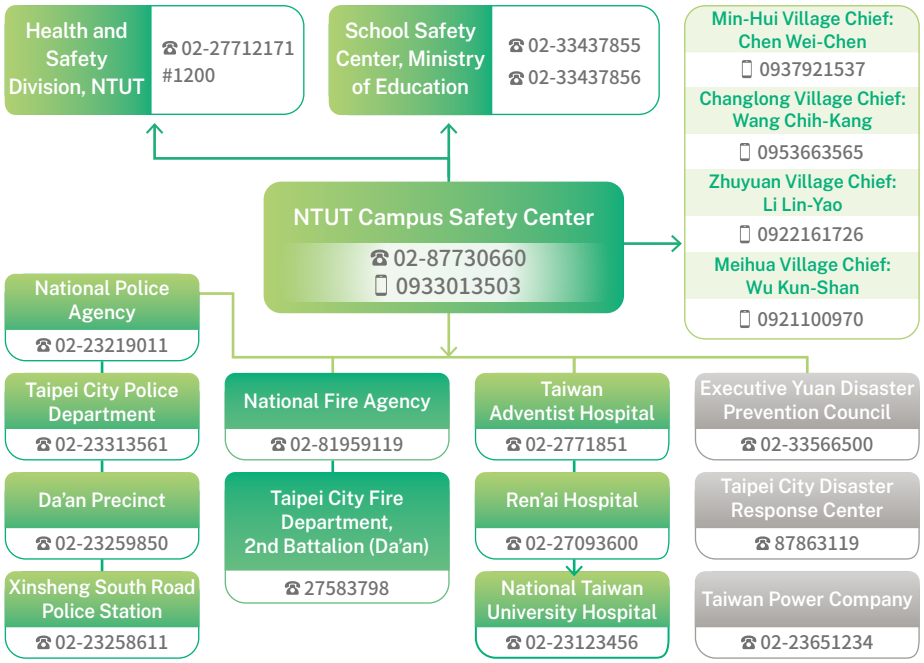
• Campus safety incident handling

To effectively maintain campus safety, the Campus Safety Center arranges for military instructors and safety personnel to take rotating 24-hour shifts. Upon receiving reports, they promptly handle emergencies (such as self-harm, traffic incidents, gender equality cases, medical emergencies), provide timely support to students, and notify parents, advisors, and related departments. All cases are also reported via the Ministry of Education's "Campus Safety and Disaster Prevention Notification System" to maintain a secure learning environment.

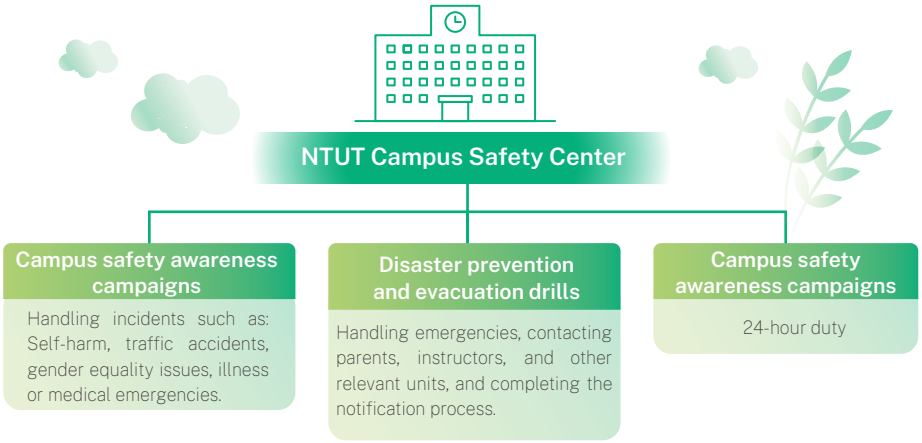
To prevent security incidents, daily patrols are conducted on-and off-campus, especially in identified high-risk areas and upper floors, ensuring safety for faculty, staff, and students. Xinsheng South Road Police Station (Da'an Precinct) strengthens patrols along designated routes each day to monitor surrounding campus security. The Campus Safety Center also collaborates with local neighborhood leaders (Minhui, Changlong, Zhuyuan, Meihua) and agencies like Xinsheng South Police Station and Da'an Fire Station by setting up LINE instant messaging groups for timely cross-unit communication and mutual assistance. An annual "Campus Safety Support Agreement" is signed between the university and local police authorities to enforce protective measures and integrate community resources.

Campus safety education is also delivered during freshman orientation, weekly assemblies, "University Introduction" courses, in-class announcements, and through social media platforms (student Facebook pages and class LINE groups). Topics include anti-fraud awareness, earthquake evacuation drills, and air-raid evacuation drills, aiming to enhance campus-wide safety awareness. Earthquake and air-raid evacuation drills are held each September during freshman orientation, conducted in Zhongzheng Hall and classrooms, with full participation from students and staff to strengthen preparedness.

- Functions of the School Safety Center



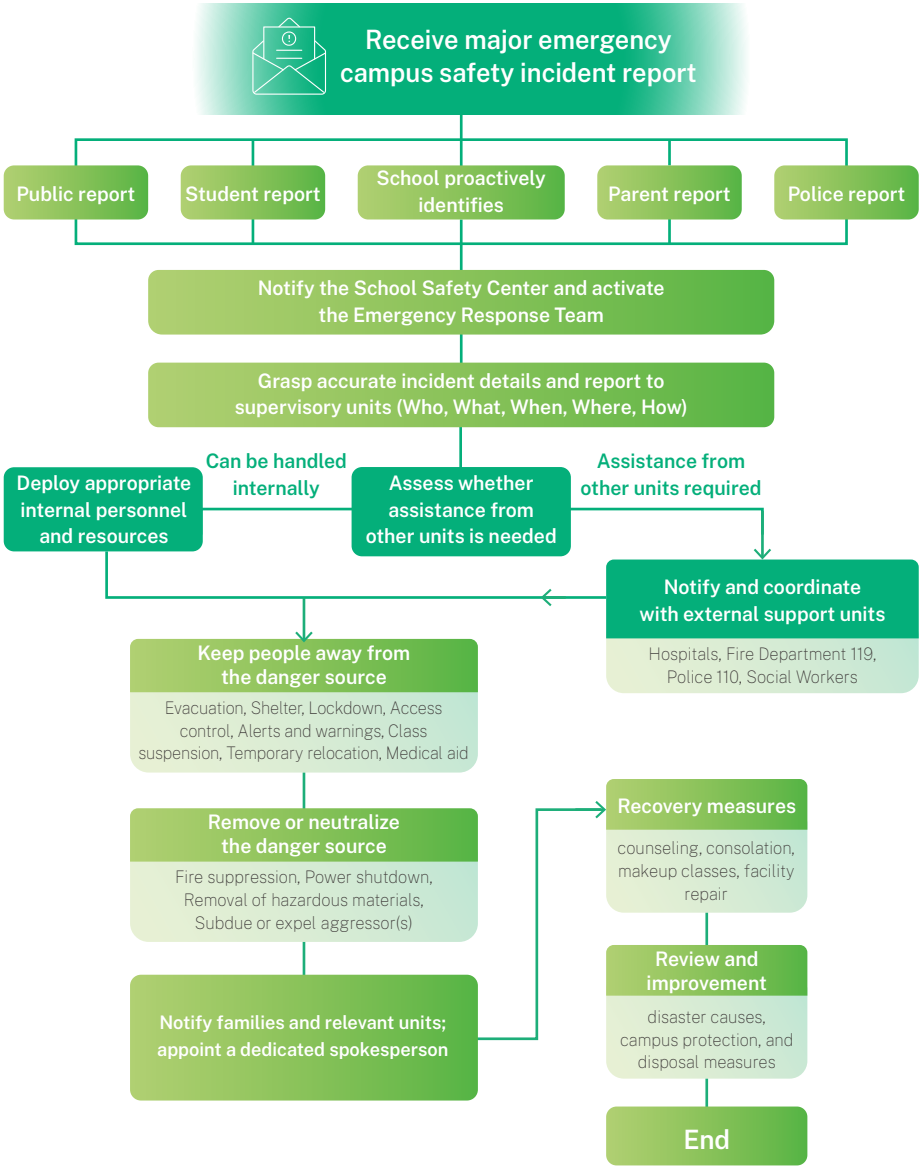
・Campus Disaster Notification Network



・Campus Disaster Notification Network

Category	Number of cases	Improvement method
1. Disease events	9	Enhance the promotion of health and hygiene.
2. Injuries and deaths	23	Enhance the promotion of life education and three-level prevention.
3. Sexual Harassment	11	Enhance the promotion of gender equality education and personal safety.
4. Traffic accidents	5	Enhance the promotion of traffic safety education.
5. Other events	14	Track, care, and assist in handling various matters to prevent hazardous accidents.

・Emergency Response and Notification Handling Process



• Campus safety measures and facilities

	Implementation Method		Implementation Status
1	Traffic Safety	Campus Vehicle Control	No vehicles or motorcycles are allowed to enter the campus. Vehicle parking spaces are located in parking lots and basements. Applications for parking space and driving of the school vehicle are controlled by the security or management personnel of the campus, and the vehicle is driven at a limited speed of 15 km per hour.
		Parking management	The underground parking lot in the West Campus has adopted a smart management system, incorporating UHF (Ultra High Frequency) long-range card readers and AI image recognition technology. This system enables automatic license plate recognition, enhancing the efficiency and effectiveness of on-campus parking safety management. The system is equipped with eTag, vehicle number, and floor space features.
2	Disease Incidents	Enhancing Student Health Status Monitoring	1. Upon receiving a report of a suspected case of severe infectious pneumonia, the Health Services Division immediately conducts a rapid screening test. The student is provided with health education and placed under self-health management for five days. During this period, students with symptoms are advised to take leave and rest. If the rapid test result is negative, the self-management can be lifted early. 2. The General Affairs Division is requested to regularly clean and disinfect high-risk areas on campus.
3	Self-Harm and Suicide Incidents	Strengthening Student Mental Health	1. The Counseling Center regularly holds mental health seminars to promote both physical and psychological well-being among students. 2. In cases involving students with more severe mental health concerns, the Counseling Center not only provides regular counseling services but also informs academic advisors and military instructors. These parties work together to continuously monitor and support the student's mental and emotional condition.
4	Campus security		The Campus Security Center and Guard Office operate 24/7, with responsibilities including campus access control, security patrols, traffic guidance, and reporting of abnormal incidents, all managed by the on-site security team. A "Campus Safety Support Agreement" has been signed with the Xinsheng South Road Police Station to designate additional patrol hotspots. At the start of each semester, enhanced safety awareness campaigns are conducted for new students, including the release of a campus safety map and a 24-hour emergency contact hotline.
5	Access control management	E-Cloud Access Control Management	A digital cloud-based access control system has been implemented to effectively regulate campus entry and exit, especially during epidemic prevention periods. The system automatically syncs personnel data with the school's administrative and ID card systems, reducing the risk of unauthorized use and easing manpower demands.
		Dormitory Access Control	To ensure dormitory safety, designated safe return routes have been mapped out, with key lighting along the paths extended until 3:00 a.m. Dormitory buildings are equipped with access control systems and staffed by dedicated managers on 24-hour shifts. During the semester, the school conducts off-campus housing visits to help students assess their living conditions and environmental safety, and provide guidance on emergency response procedures, enhancing overall safety awareness.
		Real-Name Registration During the Pandemic	During the pandemic, a real-name entry system was enforced from Monday to Saturday, 7:30 a.m. to 8:00 p.m. Faculty, staff, and students were required to present valid ID to enter campus. Visitors were required to scan a QR code with their mobile phones to apply for a temporary pass, balancing safety with convenience.
6	Surveillance system		The campus surveillance system includes nearly 300 cameras. In addition to ongoing reviews and adjustments to camera placement, all units are being upgraded to new IP-based network cameras.
7	Nightlight lighting		Since November 2020, the school has conducted a comprehensive inspection and upgrade of all campus nighttime lighting. Lights are now turned on earlier at 5:00 p.m., with lighting levels on main pathways increasing by 20%. For dormitory residents, designated safe return routes have been planned, with critical lighting along these paths extended until 3:00 a.m.
8	Protection of high levels		Protective safety nets have been installed on the rooftops of tall buildings to prevent accidents. These installations cover four locations: the Comprehensive Building, Hong-Yu Technology Building, the Third Teaching Building, and Zhongzheng Hall.
9	Emergency aid system (AED)		A total of 13 Automated External Defibrillators (AEDs) have been installed in public areas across the campus to support emergency medical needs.

• Disaster prevention and control and traffic safety promotion

In order to establish the concept of students' safety on campus, the school's training room regularly organizes education and activities related to disaster prevention and traffic safety promotion:

National earthquake evacuation drill

The earthquake evacuation and evacuation drills were conducted at the Zhongzheng Hall on the first day of the year and in the classroom on September 21. The employees of the Military Training Office promoted the concept of disaster prevention to all the employees of Daishin Life Tech. The drill details are as follows:

1. **Earthquake Evacuation:** The three steps for earthquake prevention are "staying down, covering up, and staying stable," and the precautions to be taken to develop the crisis response ability of students.
2. **Air Evacuation Drill:** Publicize the air evacuation sheltered action (maintain low posture, shield eyes and ears, and widen the mouth and leave the ground), and remind students of the air evacuation position at our school (8 locations, respectively, are: Materials and Resources Building, Hong-Yu Technology Building, Zhongxiao Arts and Culture Corridor, General Education Building, Integrated Science Building, Parking Lot, Third Teaching Building, and the basement of Zhongzheng Hall. Based on classroom locations, students were grouped by department and led by military instructors and senior student mentors to nearby evacuation points. Through hands-on air-raid evacuation exercises and educational instruction on emergency response, students' disaster preparedness and response capabilities were strengthened, effectively reducing potential losses and enhancing overall campus safety.
3. At 9:21 a.m. on September 21, the Central Meteorological Bureau issued the "National Disaster Day Earthquake Warning System" through the "Meteorological Forecast System," and sent test warnings through personal handheld devices and mobile phones. The school also uses the electronic bulletin board to play the "National Disaster Prevention Day" earthquake rapid response drill, and respond to the earthquake (falling, sheltering, and stabilizing the "Earthquake Disaster Drill"), to enhance the visibility and density of the promotion, and expand the effectiveness of the serial promotion.

Publicize traffic safety awareness during the reporting of work

In order to enhance students' awareness of traffic safety, the following methods are used for the promotion of the school every semester:

1. **Integrated into the course:** The school have invited Tsai, Ming-Li, an old teacher from the National Chiao Tung University, to use the National Defense Education Course to conduct traffic safety awareness education and strengthen the students' traffic safety knowledge and safety awareness.
2. **Digital media promotion:** The latest traffic safety information (important regulatory updates, walking and pedestrian safety guidelines, and related promotional videos) is published on the official website of the Military Training Room and various communication groups from time to time to enhance teachers and students' traffic safety awareness.
3. **Diverse event promotion:** The School utilizes the guidance of the new students and weekly meetings to promote traffic safety, ensuring that the students can establish the correct safety concepts and jointly create a safe campus environment.

Health Promotion

Except for the roads adjacent to the campus, such as Shinsei Nanpuo Rd., Zhongxiao E. Rd., and Chienkuo S. Rd., smoking is prohibited. In response to the amendment to the Tobacco Control Act, the smoking area was removed on March 1, 2023, and the school was completely smoke-free. The school have set up no-smoking signs at the entrances and exits, public announcements, and non-smoking walkway of the school. The school have posted posters and strips. The school arranges for volunteers to promote “no-smoking on the campus” and “no-smoking in the hallway” in the campus and on the hallway. If there is any violation of the Tobacco Control Act on campus, it will be recorded in accordance with the “NTUT Campus Tobacco Control and Management Operation Directions” and reported to the competent authority for management. In addition, we organize smoking cessation courses with medical institutions every year, where physicians, psychologists, and nutritionists are invited to conduct classes to teach smoking cessation skills and healthy diets. The course aims to build self-image and confidence, and to enhance the effectiveness of smoking cessation through discussions, sharing, and mutual motivation. The Military Training Room, Police and Health Office, and Health Insurance Team conducted inspections of campuses and non-smoking pathways. A total of 35 people were advised to refrain from smoking in 2022, 21 in 2023, and 23 in 2024. The school will continue to create a non-smoking campus environment.

- Health Promotion Activities

Name of health promotion activity	Event Description	
“My Healthy Plate for Balanced Meal,” “Drink More Water, Reduce Sugary Beverages,” and “Free Anonymous HIV Screening and Awareness Campaign.”	• The Club Expo was co-organized with the Da’an District Health Service Center and the Taipei City Hospital Kunming Prevention and Control Center, with a total of 255 participants. • The school celebration and the health service center in Daan District jointly organized by the school, with a total of 455 participants.	 
Health promotion courses: “Physical Fitness Class, Blood Pressure and Cholesterol Reduction Class, and Boxing Aerobics Class.”	For faculty, staff, and students with BMI ≥ 25, systolic blood pressure ≥ 130 mmHg, diastolic blood pressure ≥ 85 mmHg, or total cholesterol > 200, the program included 8 boxing aerobics sessions, 5 spinning aerobics sessions, and 8 nutrition courses. A total of 85 participants (49 faculty and staff, 36 students) attended, resulting in 37 sessions with 799 total participants.	
Tobacco Hazard Prevention and Carbon Monoxide Testing Awareness Promotion	Club fairs and other campus activities were organized in collaboration with the Taipei City Hospital Veterans’ Home. The goal was to provide a quiz on tobacco hazards and award winners. A total of 216 people participated.	 
Red Cross Society Junior First Aid Training	2 days, 16 hours, 40 people, all of whom completed the training and passed the tests of the departments and vocational school. 36 people received the initial first aid certificate.	 

04

Excellence in Education Development

4-1 Sustainability Research

• Management Approach

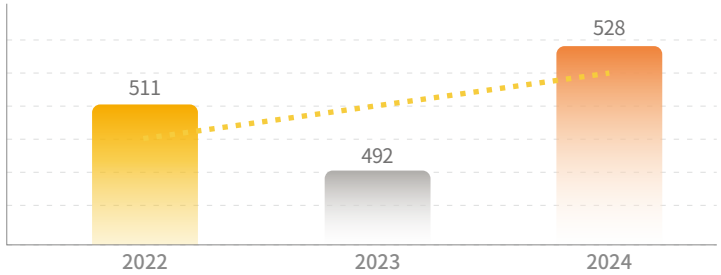
In order to implement the sustainable development goals, we have actively encouraged teachers to conduct sustainable development research in recent years. In addition to incorporating the United Nations Sustainable Development Goals (SDGs) into the reference direction of the teachers' papers, we have also provided various sustainable development research support measures.

Research and industry-academia collaboration		
Policies/ Commitments	Establish and update the SDGs database, encourage academic institutions to publish their achievements. The school organizes promotional activities every year to increase the annual growth rate of research papers; provide incentives and subsidy programs; promote academic freedom and improve the atmosphere of research publication.	
Responsible Unit	R&D Division, Information Division	
	Goals and Actions	**Evaluation Mechanism**
Short-term (2 years)	1. Provide SDGs research grants and hold SDGs research courses to enhance research capabilities. 2. The school gives the teaching and research personnel who have published SDGs-related papers extra points to promote the sustainability project of the National Science and Technology Council and support the sustainable cooperation project. 3. Signed an Open Access submission agreement with the journal to create an information web page.	· Number of SDGs Academic Personnel and Activities · SDG Paper Publication Quantity and Publication Quality · Open Access Submission Subsidy and Number of Pages
Mid-term (4 years)	1. Update the SDGs development trend report. 2. Expand the weight of SDGs papers, promote cross-disciplinary cooperation, and hold SDGs research project proposal promotion meetings. 3. Organized academic freedom promotion activities.	· Analysis of the development trend of SDGs · Promote the number of meetings · Academic Openness Promotion Activity Participation Rate
Long-term (8 years)	1. Encourage participation in international seminars and providing SDG research reports. 2. Enhance SDGs paper weighting and promotion, and establish an evaluation mechanism for campus-enterprise cooperation projects. 3. Establish the Open Access resource section to enhance researchers' understanding of Open Access.	· Number of papers published and growth rate · Monitoring Academic Influence and Collaboration Outcomes · Open Information Website
Corresponding Standards	GRI Formulate indicators	
	SDGs 	
	STARS · AC 9: Research and Scholarship · AC10: Support for Sustainability Research · AC11: Open Access to Research	

• Teachers published SDGs papers in international journals

According to the data of the Scopus database, the NTUT is used as the research institution to track the number of research publications related to the SDGs of the author from 2022 to 2024. A paper may respond to multiple SDGs. When counting the number of SDGs, the number of repeated papers have been deducted. In 2022, there were 511 papers, and in 2023, there were 492 papers, and in 2024, there were 528 papers.

・Number of papers related to SDGs



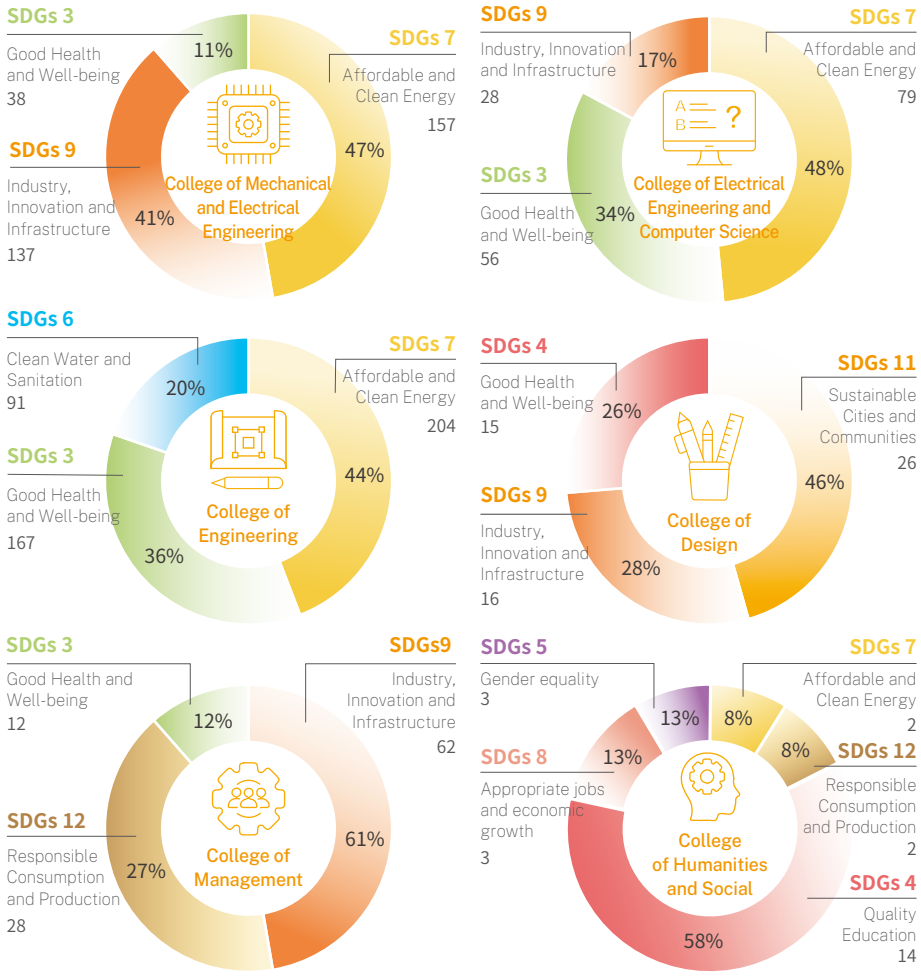
• Quantity and relevance of teachers' teaching on 17 SDGs

According to the data of the Scopus database, the NTUT is used as the research institution to track the research publications related to SDGs from 2022 to 2024.

Number of pages	2022	2023	2024
SDG1	4	2	3
SDG2	9	5	10
SDG3	118	101	125
SDG4	14	34	27
SDG5	5	5	2
SDG6	45	52	52
SDG7	175	135	182
SDG8	31	19	28
SDG9	108	122	139
SDG10	3	5	7
SDG11	47	46	48
SDG12	44	55	47
SDG13	40	35	49
SDG14	11	10	10
SDG15	3	7	8
SDG16	13	5	4
SDG17	0	0	0
Total	670	638	741

• Teacher statistics of each school on sustainability research results

In the last three years, the teachers of each school responded to different indicators in the sustainability research results. The most common indicators are “SDG7 Affordable and Clean Energy,” “SDG9 Industry Innovation and Infrastructure,” and “SDG3 Good Health and Well-being.”



• Formulate sustainability research incentive measures

In response to the global sustainable research and development trends, the school has established various scholarship calculation methods for outstanding teachers, outstanding talent flexible salary, teaching and students’ paper awards, etc. The 1.1 additional weight is applied to the United Nations’ 17 SDGs to encourage the school’s teaching and research personnel to publish high-quality international papers related to SDGs.

• Promoting Sustainable Development Research through Innovative Research Communities

Establishing Guidelines for Faculty-led Growth Community Subsidies

To actively promote interdisciplinary collaboration and support the formation of growth communities, the university encourages faculty members to lead students in forming research teams that cross departments, colleges, universities, industries, and international borders. These teams focus on two major goals: “technological R&D” and “talent cultivation.” The university has established the “National Taipei University of Technology Guidelines for Subsidizing Innovative Research and Technological Development Growth Communities,” which provides funding for academic exchange activities that support faculty collaboration and stimulate students’ research potential. The main focus of these community exchanges is aligned with the 17 SDG indicators. By integrating the research strengths of faculty from various disciplines both inside and outside the university, these communities aim to enhance growth momentum, increase the university’s R&D capabilities and teaching quality, and promote research on sustainable development.

Progress and Achievements Over the Past Three Years

Between 2022 and 2024, a total of 26 talent cultivation communities and 32 technology R&D communities were established, with over 700 participants from faculty within and outside the university. More than 300 exchange activities were organized, addressing multiple SDG indicators. Among them, SDG 9 (Industry, Innovation, and Infrastructure) and SDG 7 (Affordable and Clean Energy) had the highest levels of engagement. These efforts are part of the university’s commitment to promoting sustainability-focused research and exchange.

Examples of Research Impact from Innovative Research Communities

The “Net-Zero Building and Green Energy Technology Innovation Community,” initiated by faculty from the Department of Mechanical Engineering, has conducted continuous community exchanges for three consecutive years. Continuing the tradition of tripartite discussions among academia, industry, and research sectors, the community has focused on net-zero architecture, green energy applications, and energy efficiency improvements, achieving breakthrough results. These outcomes have been applied in industrial practice, helping enterprises address ESG issues, effectively reduce carbon emissions, and achieve environmental sustainability goals. At the same time, students were led to participate in research projects under the National Science and Technology Council, industry–academia collaborations, and teaching practice initiatives. This has helped cultivate more professionals in green technology and sustainable engineering. In recognition of these efforts, the community received the “Best Research Award” in the 2023 Innovation and Sustainable Practice Competition.

Talent Cultivation

Offshore Wind Power and National Defense Ship Structure Welding Professional Training Community

Talent Cultivation

Talent Cultivation Community for Emerging Technologies and Experience Design

Technology R&D

Organic Laser Development and Application Growth Community

• PBL Industry–Academia R&D Projects Integrated with SDG Goals

Establishment of PBL Industry–Academia R&D Project Subsidy Guidelines

In addition to the existing guidelines – "National Taipei University of Technology Subsidy for Faculty Conducting PBL R&D Projects" and "Operational Guidelines for Student-led PBL Research and Development Projects" – a new set of guidelines was introduced in 2024: the "Operational Guidelines for Faculty-led PBL Workshops at NTUT." These are designed to encourage participation from both domestic and international academic institutions and industry partners in PBL workshop activities. With SDG 17 (Partnerships for the Goals) as the primary objective, the initiative aims to enhance the effectiveness of research and teaching by faculty, while cultivating students' capabilities in interdisciplinary collaboration, self-directed learning, critical thinking, and problem-solving. Furthermore, the program adopts a progressive three-phase learning model – Team-Based Learning (TBL), Problem-Based Learning (PBL), and Solution-Based Learning (SBL) – to systematically integrate academic research with sustainable development. The outcomes of these projects serve as concrete implementation models for achieving the SDG goals, ultimately maximizing the practical impact of resolving issues related to social sustainability.

Progress in the Past Three Years

In 2022, a total of 311 students were trained. The number increased to 312 in 2023 and further rose to 320 in 2024. The university continues to actively promote and encourage faculty and students to engage in PBL-based research projects annually. At the same time, the university has organized various themed PBL workshops to encourage students to form transnational and interdisciplinary research teams. Through hands-on activities, they develop sustainable product prototypes and participate in related competitions to validate innovative research results and strengthen their alignment with the SDGs. These efforts further promote the sustainable development of society and the environment.

Examples of Sustainability Outcomes from PBL Projects

- The "Ning Stone" project, co-designed by students from the Department of Industrial Design, uses the ocean as a medium and stacked stones as a visual metaphor. It features recycled ocean waste glass to enhance the value of sustainable glass reuse. The design integrates magnetic levitation lighting, wave drums, hourglass stones, massage stones, and aroma stones to stimulate all five senses. The sounds of the sea and the floating movement created by magnetic levitation help users detach from daily distractions, enter a meditative state, and regain inner peace. This project promotes sustainable values by embedding environmentally friendly interactive design into everyday life. It was awarded the Silver Award for Industry–Academia Collaboration in the 2024 Young Designers' Exhibition.

- In 2024, during the summer vacation, the "2024 PBL x SDGs International Sustainable Innovation Talent Workshop" was held, conducted across Taiwan, Japan, and South Korea in collaboration with Osaka Institute of Technology (Japan), Kookmin University (Korea), and co-funded by private enterprises. A total of 11 sustainability organizations across international enterprises and universities were visited. Students were grouped into cross-national teams and worked on four topics proposed by Sekisui House (Japan), HORIBA Korea, Compal Electronics, and FZTech, including future mobile housing, experimental vehicles, AI-integrated computers, and human sensory communication. These teams explored the coexistence and future development of various industries and sustainability, producing ideas and prototypes in support of the university's international collaboration in sustainable innovation research.

• Academic openness and sustainable research resources

The university library actively builds a collection system to meet teaching and research needs, offering services that fulfill information requirements. The collection includes 450,222 printed books, 65,730 electronic journals, 965,044 e-books, 9,614 audiovisual materials, and 286 electronic databases. The library also actively gathers various Open Access resources, providing 63 types of free resources – such as arXiv, DOAJ, and IRDB – via its electronic resources search system for faculty and students to use free of charge, offering equal access to knowledge and quality education for all, and serving as an essential medium for sustainable development.

To support faculty and students in conducting sustainability research and learning, the library has actively curated SDG-related resources in recent years to enhance awareness and understanding of sustainability issues. In addition to books and audiovisual materials, it has subscribed to multiple databases supporting sustainability research, such as the "IEK Industry Intelligence Network (IEKNet)" modules on Net-Zero–Sustainable Energy and Net-Zero–Smart Energy Efficiency, the "Taiwan Economic Journal (TEJ)" ESG module (ESG Sustainability Solution), and the "GreenFILE" database by EBSCO. An "SDGs Learning Resources Section" has been created on the website, compiling five types of SDG-related resources – books, audiovisuals, e-magazines, electronic databases, etc. – with a total of 328 items to facilitate self-learning and SDG-related research for faculty and students. In 2024, the university library also organized four educational sessions on the use of electronic resources for sustainable development topics, including: "Exploring the Latest Industry Technology Trends – Sustainability Topics via IEKNet," "Using SciVal and Scopus to Grasp Research Trends – SDG Focus," "From SDGs to Practice – Exploring a Sustainable Future with the Emerald Database," and "Searching Literature with ProQuest – Using SDGs as an Example." These sessions totaled 4.5 hours and had 165 participants, helping enhance the information literacy of faculty and students on SDG-related resources and strengthening the university's academic capacity in sustainability research.

The university continues to promote academic openness and global sharing of research achievements. Over the past three years, a total of 1,343 SCI/SSCI papers have been published in Open Access format, accounting for 37% of total publications. To further academic dissemination, the university has signed Open Access publishing agreements with ACS, Elsevier, IEEE, and Wiley, offering Article Processing Charge (APC) waivers or discounts to encourage faculty and students to publish in Open Access format. Meanwhile, the university also encourages students to authorize the public release of their theses. Over the past three years, 99% of theses have been authorized for public access, with more than 19,000 digital theses available online free to the public. The university has been awarded the National Central Library's Taiwan Academic Resource Impact Award for four consecutive years.

Year	SCIE/SSCI research papers			Degree papers		
	Total	OA publications	Open access ratio	Total	OA publications	Open access ratio
2022	1218	502	41%	1872	1856	99%
2023	1033	427	41%	1824	1811	99%
2024	1119	414	37%	1983	1949	98%

Source: Web of Science database and the National Digital Library of Theses and Dissertations in Taiwan (NDLTD Taiwan).

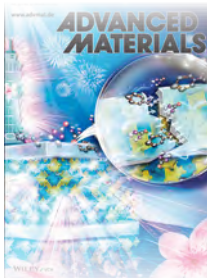
To promote lifelong learning for all, the university library offers borrowing privileges to various reader groups, including current (and retired) faculty and staff family members, staff of the affiliated high school, and nearby residents. The library actively engages with the community through services such as booth registration at university anniversary events and occasional guided tours for local residents. In 2024, a total of 14 eligible readers applied for borrowing cards.

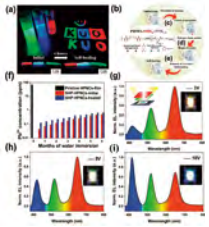
Additionally, the library is a member of the Taiwan Interlibrary Cooperation Association, providing access to its resources to over 300 member libraries. This facilitates rapid and smooth acquisition of research and learning resources by faculty and students of member institutions. Based on mutual cooperation, the library aims for resource sharing. In 2023, NTUT served as the chair institution of the Association's Interlibrary Cooperation Professional Development Committee, organizing library-related training for members nationwide. The library received the Enthusiastic Service Award and was also honored for five consecutive years (2019–2023) with the National Interlibrary Cooperation Excellence Award for Technical and Vocational Libraries, with a total of 1,235 service cases recorded over the past three years.

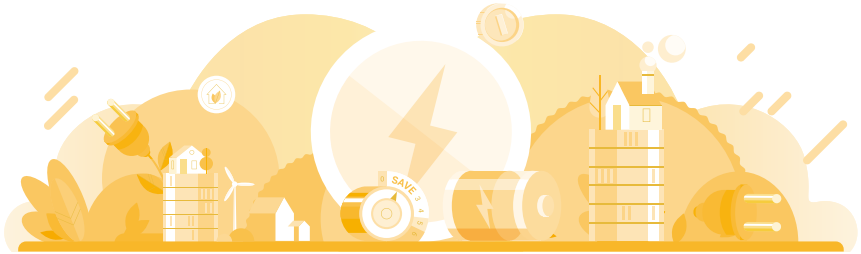
• Sustainability Research Case

Research title	Self-Healing Polymers Combined with Optoelectronic Materials Leading the New Generation of Green Innovation
Project Leader	Professor Chi-Ching Kuo, Department of Molecular Science and Engineering

Professor Chi-Ching Kuo of the Department of Molecular Science and Engineering, National Taipei University of Technology, has developed a new class of self-healing polymer materials to advance green and environmentally friendly technologies. These polymers can autonomously repair structural damage, mimicking the wound-healing process of the human body, and effectively reducing resource consumption. By integrating these self-healing polymers with the optoelectronic material perovskite, the research achieved an innovative application of self-healing materials in optoelectronic devices, establishing a new benchmark for Taiwan in this field. Professor Kuo pointed out that perovskite faces two major challenges: it is highly susceptible to degradation by moisture and oxygen, and it may contain lead, posing potential environmental hazards. To address these issues, he encapsulated the perovskite within a self-healing polymer matrix, effectively isolating it from moisture and oxygen while preventing lead leakage. Additionally, he developed a novel perovskite synthesis technology, enabling precise control over composition ratios to obtain high-purity materials and improve device efficiency. These technological advancements are expected to find future applications in display backlight modules, optical memory devices, and even nanogenerators.







Research Title	Front-End Service Design for Light XR Reality Entertainment Interactive Game
Project Leaders	Lecturer Chuang Tze-Kuang, Department of Interaction Design; Associate Professor Han Ping-Hsuan

The Front-End Service Design for Light XR Reality Entertainment Interactive Game is an industry–academia collaboration between the Department of Interaction Design, NNTUT and Light Era Co., Ltd. The project aims to foster talent development, support creative product innovation, and enhance the company's SDG-focused corporate image through close collaboration. The project selected the Light XR Reality Park in Taipei Children's Amusement Park as the experimental venue. Through on-site investigations and service process optimization, NTUT's Interaction Design curriculum incorporated the project into student coursework for creative product development and testing, with the aim of achieving innovative outcomes. This collaborative design project addresses four core objectives:

1. Talent cultivation and recruitment: The program aims to strengthen the practical capabilities of NTUT students through hands-on coursework, while also building a pipeline of outstanding talent for Light Era.
2. Mutual traffic and marketing cooperation: By leveraging NTUT's social media and public relations platforms in combination with Light Era's brand image, the project facilitates mutual exposure and increased market visibility.
3. Test site development and creative product testing: The Light XR Park serves as a testbed for students to translate design concepts into tangible product prototypes, conducting real-world testing and validation.
4. Corporate image building and SDG implementation: Through this partnership, Light Era demonstrates its commitment to the Sustainable Development Goals (SDGs) and strengthens its image in corporate social responsibility.

Research name	Renewable Energy Development Using Waste Rice Husk to Produce Solid Recovered Fuel
Project Leader	Professor Ying-Chu Chen, Department of Civil Engineering

Rice is a staple food across East Asia, and accordingly, the byproducts of rice production – such as rice husks – have increased significantly. Traditionally, waste rice husks are disposed of via landfilling or open burning, both of which cause serious environmental pollution. This study uses waste rice husks as raw material to produce Solid Recovered Fuel (SRF), which not only addresses the issue of waste accumulation but also reduces reliance on traditional fossil fuels.

This is a cross-national collaborative project between National Taipei University of Technology and Ho Chi Minh City University of Technology (Vietnam). The waste rice husks from both countries are shown in Figure 1. After low-temperature pretreatment, the rice husks exhibit significantly increased calorific value, although mass yield decreases. In the future, this process can support the capture and generation of hydrogen and methane for green energy production (Figure 2). As shown in Figure 3, calorific value and chlorine content are two critical indicators of fuel quality. A higher calorific value indicates greater potential to replace fossil fuels, while lower chlorine content – being a precursor of dioxins – is highly desirable. The optimal preparation condition for using rice husks as fuel is at 350°C, where the maximum calorific value reaches 6,375 kcal/kg and the chlorine content is kept below 0.1%. This allows it to serve as a clean energy source with tangible carbon-reduction benefits.

圖1

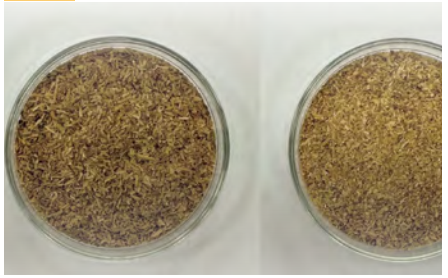
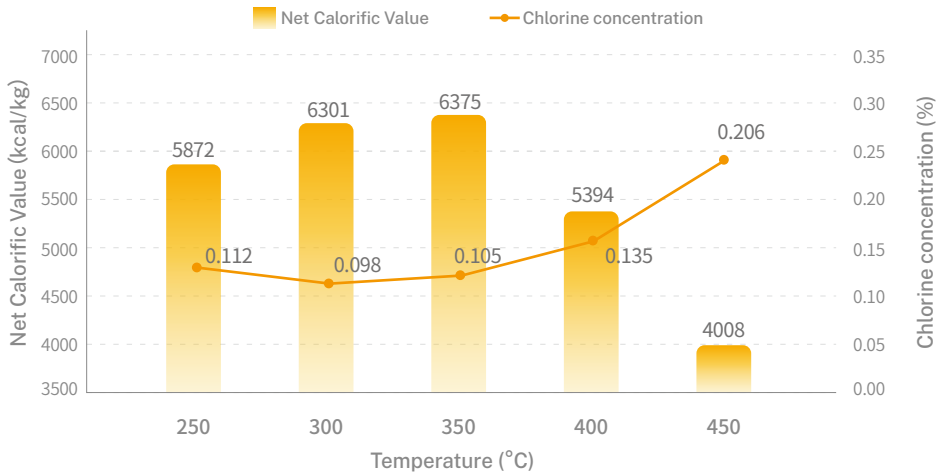


圖2

質量	1
熱值(kcal/kg)	5131

質量	0.4
熱值(kcal/kg)	6375

圖3



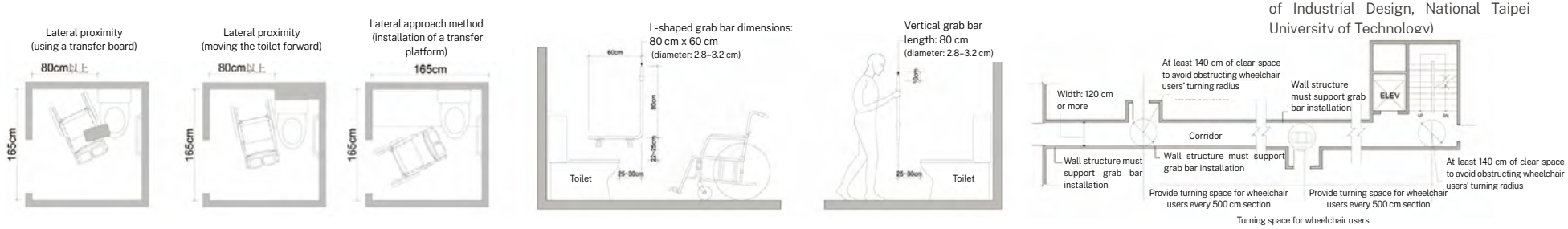
Research name	Comparative Study of Living Space Planning in Welfare Housing Systems between Taiwan and Japan
Project Leaders	Associate Professor Dong-Ming Li, Department of Industrial Design; Associate Professor Chen Chen-Cheng, Department of Architecture

Taiwan officially entered an aged society in 2018, and is expected to become a super-aged society by 2026 – defined as a population with over 20.1% aged 65 and above (approx. 4.7 million people). The transition from an aged to a super-aged society will take just seven years, signaling a rapid rise in demand for elderly home care. This change will have a significant and urgent impact on national development policies. According to the Ministry of the Interior Big Data (2023), the average age of residential buildings in Taiwan is now 32 years, and over 3.83 million homes are more than 30 years old, comprising 52.59% of all households. In a society where both the population and housing stock are aging, the issue of elderly-friendly living environments becomes increasingly important. The concept of "aging in place" is a long-term national policy goal, reflecting both the Taiwanese cultural value of "returning home to grow old" and the need to avoid the socio-economic burden of excessive institutionalization.

Globally, many countries develop senior housing based on the principle of aging in place. However, in Taiwan, due to the prevalence of old housing and inconsistencies in the timing of regulatory implementation, many residential spaces fall short of supporting aging in place. According to the Ministry of the Interior, as of 2023, Taiwan had approximately 4.83 million homes over 30 years old. Differences in the promulgation and enforcement of building regulations have led to many interior and exterior spaces being inadequate for residents' actual needs. In light of the coming super-aged society and the push for aging in place, it is now urgent to improve the safety and spatial flow of residential buildings. Facing such regulatory and structural limitations, we must adopt a human-centered approach that ensures equitable treatment for vulnerable populations, and promotes more inclusive spatial design. As a key strategy for achieving aging-in-place environments, future planning should include integrated spatial guidelines that incorporate assistive devices and medical services, enhancing residential safety and enabling large-scale, tangible transformation of living environments in preparation for a super-aged society.

The value and contribution of this study lie in its reassessment, consolidation, and extension of significant prior research. Drawing on international experience, it proposes practical recommendations for domestic regulatory reform and offers design guidance for architects and interior designers to improve the quality of residential living spaces.

▲Research results presentation seminar (Organized by the Architecture and Building Research Institute, Ministry of the Interior; hosted by the Department of Industrial Design, National Taipei University of Technology)



Research name	Campus-wide Accessible Environment Design Guide
Project coordinators	Professor Wu Ke-Chou and Lecturer-level Project Instructor Chuang Tze-Kuang, Department of Interaction Design; Professor Su Ying-Min and Assistant Professor Chen Ying-Fen, Department of Architecture

The "Guidelines for the Installation of Accessible Facilities and Equipment in Public Senior Secondary Schools and Special Education Schools" (hereinafter referred to as the "School Accessibility Installation Guidelines") were officially promulgated on July 21, 2023. All school units are required to implement these guidelines in constructing a campus-wide accessible environment. However, due to the overlap and differences among various accessibility-related regulations, implementing agencies in the education sector often face confusion regarding the correct application of existing and newly issued regulations. In addition, in order to improve the service standards of campus accessibility facilities and better align with the practical execution needs of local governments and schools, the School Accessibility Installation Guidelines still require clearer interpretation to serve as a reliable reference for building future accessible campuses.

The objectives of this project are proposed under the framework of developing a comprehensive campus-wide accessible environment.

(I) Analyze design guidelines related to overall accessible campus environments

- Organize key policy, legal, and implementation issues related to accessibility equipment in campus-wide environments.
- Clarify the relationship between accessible hardware installations and the configuration needs of accessible daily life (learning and activity) on campus.
- Review the fundamental concepts of barrier-free hardware planning, as well as relevant scale and installation standards.
- Examine evaluation and classification indicators for the overall accessible campus environment (e.g. coverage of accessible campus areas, vertical floor accessibility, feasibility of centralized facility installation), service level criteria, and supporting guidelines for both hardware and software.

(II) Clarify campus environmental design issues and improvement specifications based on student anthropometrics

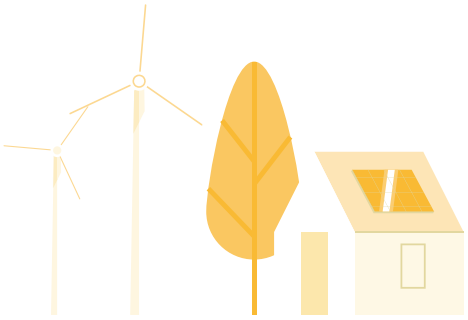
- Investigate and compile data on anthropometric differences and dynamic behavioral dimensions among junior high, vocational high, and elementary school students.
- Survey accessibility implementations and usage methods of various campus building facilities (e.g. stairs, handrail height and diameter, light switches, washbasins, urinals, toilet seats, door handles).
- Propose dimensional standards and recommendations for achieving accessibility in various campus living facilities and equipment.

(III) Develop the "Campus-wide Accessible Environment Design Guide" (hereinafter referred to as the "Design Guide") and assess its applicability

- Consolidate existing subsidy policies, implementation methods, and case studies for improving campus accessibility.
- Clarify the needs of educational personnel (principals, general affairs directors) regarding the creation of campus-wide accessible environments.
- Draft the Design Guide in response to current legal practices, educational personnel needs, and focus areas.

(IV) Compile and format the "Campus-wide Accessible Environment Planning Guide" and accompanying recommendations

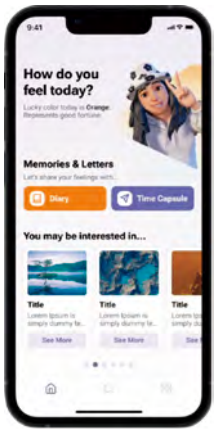
- Collect and organize the Design Guide contents, including required image catalogs and summaries.
- Survey and illustrate various diagrams, case examples, and integrate the visual style of the Design Guide.
- Finalize editing and layout of the Design Guide.

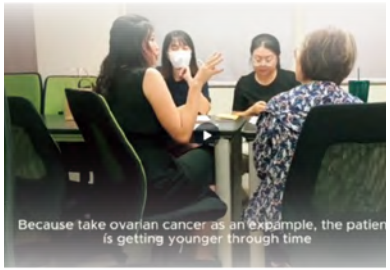


Research Title	Cancer Patient Psychological Support App – H2H Mental Health Support App
Project Coordinator	Professor Huang Yi-Ting, Department of Interaction Design

Graduate students from the Department of Interaction Design (including both local and international students) collaborated with the Hope Foundation for Cancer Care, conducting in-depth interviews with cancer patients and foundation staff to understand the cancer journey and its associated hardships. By identifying key pain points, the team sought to apply human-centered design and creative strategies to address these issues through the development of an app.

During this process, students cultivated empathy and a sense of social responsibility, gaining deep insight into the challenges and needs faced by cancer patients. Through their interactions with patients, students honed their ability to listen respectfully and recognize the value of others' experiences. This project helped students realize that design is not merely about technical skills or creativity – it is also an act of compassion and a mission-driven practice. It encouraged them to integrate technology with humanistic values in their future careers, approaching their work with responsibility and ethics to create a meaningful societal impact.





Research Title	Circular Material Brick Design and Prototype Development
Project Coordinator	Project Lecturer Chen Chang-Hsien, Department of Architecture

"Design from the perspective of materials is always a compelling stance." (Chris Lefteri, 2014). Since the digital revolution, digital manufacturing and integrated workflows have re-established materials as a critical knowledge domain in architecture, treated with increasing sophistication. The concept of "Material Systems," which regards materials as intrinsic to the design process, has gained renewed attention – bringing the ethos of material honesty back into focus.

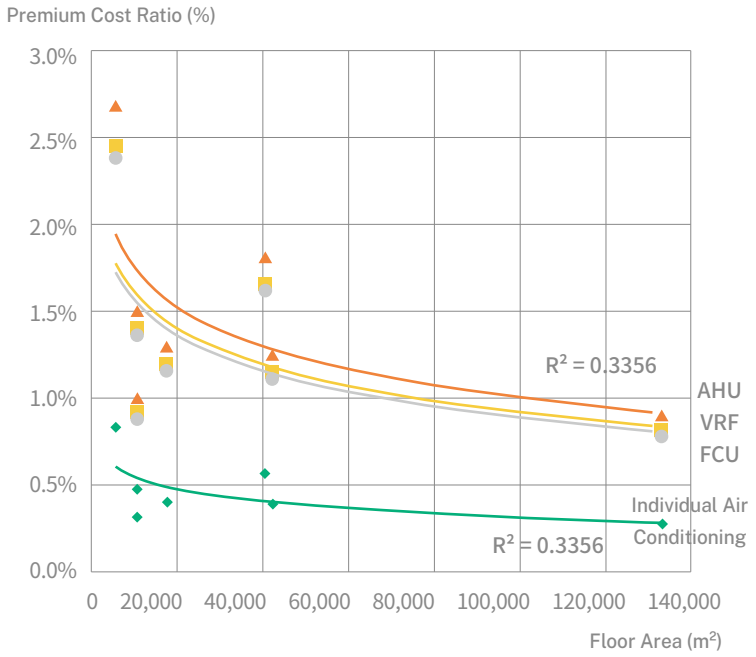
In material systems, not only is a deep understanding of material properties important, but so is selecting the right processing method to express these properties with precision and minimal waste. To explore this, the Taiwan Design Research Institute partnered with NTUT's ECHO TALLER team (Department of Architecture) in an industry–academia collaboration, using C-STONE (a recycled granite-based slurry) as the core circular material. Through low-cost digital manufacturing tools, molds were created to produce multifunctional 3D brick units, along with applicable construction methods – demonstrating how designers can creatively participate in material innovation within resource constraints.

The bricks developed use alkali-activated binders (a type of recycled material) that achieve strength comparable to that of cement-based products. These bricks are not only structural but can also be adapted into green plant modules, decorative flowerpots, or floor tiles, including Wind Vessel, Chain Bricks, and Pattern Bricks. Among these, the BUTTRESS 3D brick evolved into several versions tailored to wet, semi-wet, and dry construction techniques. The outcomes were exhibited in the main theme section Super COOL Circular Solutions at the 2024 Taiwan Design Expo.

Research Title	Cost-Benefit Analysis of Near-Zero Carbon Office Buildings
Project Coordinator	Assistant Professor Yen Chia-Ju, Department of Architecture

To support the government in implementing net-zero building policies, this research focused on office buildings and analyzed the cost-effectiveness of energy-efficient equipment based on three key performance indicators from the BERSn (Building Energy Rating System for new buildings): EEV (Envelope Energy Efficiency), EL (Lighting Energy Efficiency), and EAC (Air Conditioning Energy Efficiency). The aim was to determine the optimal cost-effective strategies for equipment investment. A baseline model was established to meet the minimum criteria of the EEWH Green Building Label, i.e. EAC = 0.8 and EL = 0.8. Near-zero carbon investment criteria were defined as EAC ≤ 0.5 and EL ≤ 0.5 (with an energy-saving rate ESR < 0.5). Based on responses from 28 HVAC experts, cost analyses were conducted for basic, mid-level, and high-end air conditioning technologies. The findings helped determine the most cost-effective and feasible near-zero HVAC solutions that keep the total Air Conditioning Efficiency (ACE) ≤ 0.8, and combined energy-saving technologies (α1–α12) achieving ESR ≥ 0.3. The calculated air conditioning premium cost ratio ranged from 25.5% to 39.7%. For lighting, under near-zero carbon requirements, simulations showed that maintaining an average operational illuminance of 500 LUX could be achieved with LED panel lights or T8 LED fixtures (with energy-saving labels), satisfying EL ≤ 0.5.

The premium costs of achieving near-zero carbon standards were calculated using seven case studies, comparing floor area and total construction costs. The resulting premium cost ratio ranged from 0.46% to 1.50%, with investment payback periods of approximately 2.4 to 6.6 years. Findings indicate that Taiwan's relatively low cost of near-zero design is due to the limited insulation benefit of building envelopes in its subtropical climate. Thus, envelope upgrades may not be necessary, and lighting upgrades incur minimal additional costs. This makes air conditioning optimization a highly cost-effective path. Regardless of building scale or HVAC system type, Taiwan shows very competitive international performance in near-zero carbon design, making the policy highly feasible and worthy of promotion by both government and industry. The study also confirms that EEWH-BERS offers a logical, affordable, and market-aligned solution to meet climate targets.



4-2 Sustainability Education

• Management Approach

The school's educational goal is to cultivate professional talent and future business leaders who possess high moral standards, core competencies, international perspectives, and a deep sense of social responsibility. It focuses on enhancing students' innovative leadership abilities and practical problem-solving skills, while actively promoting meaningful student engagement with and realization of sustainable development. Through the diverse planning of foundational core courses, general education, cross-disciplinary programs, and micro-certificate programs, the university comprehensively promotes both professional skill development and character education. This approach to holistic and life education provides students with a variety of learning and continuing education opportunities, further advancing the goal of sustainable education and fostering well-rounded, capable university graduates.

Educational Quality and Effectiveness		
Policies/ Commitments	The university integrates sustainable development into its teaching by providing innovative instructional resources, promoting environmental protection, energy conservation, and resource recycling to create a green campus. It also aims to enhance teaching quality, cultivate globally-minded professional talent, and strengthen education for sustainable development.	
Responsible Unit	Office of Academic Affairs, School of Continuing Education, General Knowledge Center, Campus Sustainability Center	
	Goals and Actions	**Evaluation Mechanism**
Short-term (2 years)	1. Co-develop SDG-related MOOCs courses with partner universities. Promote AI and sustainability-focused courses and organize faculty training workshops on sustainability literacy. 2. Offer short-term sustainability courses and workshops. Launch the general education course "Urbanization and Natural Ecosystems" to enhance biodiversity and campus ecological protection. 3. Design integrated education courses combining Innovative Teaching and Sustainable Education, with at least one sustainable development training session held annually.	• Number of course enrollments • Post-course satisfaction rates • Number of sustainability-related lectures held
Mid-term (4 years)	1. Integrate MOOCs content, revise academic program regulations, implement a certification system, encourage faculty to develop sustainability courses, and establish a performance-based compensation system. 2. Promote interdisciplinary sustainability courses and add 2–4 new courses to enhance awareness and practice of sustainable development in academia. 3. Collaborate with the National Taipei University Joint University System to co-host two sustainable development training sessions per year.	
Long-term (8 years)	1. Provide incentives for faculty to offer innovative sustainability courses and introduce a bonus-point compensation system. Share course results with partner universities. 2. Build a sustainable learning platform offering interdisciplinary learning opportunities that integrate arts activities with sustainability content to enhance student engagement. 3. Recognize international micro-credential programs, establish SDG-themed micro-certificate programs, and host three sustainable development education and training sessions each year.	
Corresponding Standards	GRI: Formulate indicators	
	SDGs: 	
	STARS: • AC 1: Academic Courses • AC 2: Learning Outcomes • AC 3: Undergraduate Program • AC 5: Immersive Experience • AC 6: Sustainability Literacy Assessment • AC 7: Incentives for Developing Courses • AC 8: Campus as a Living Laboratory • EN 1: Student Educators Program • EN 2: Student Orientation • EN 6: Assessing Sustainability Culture	

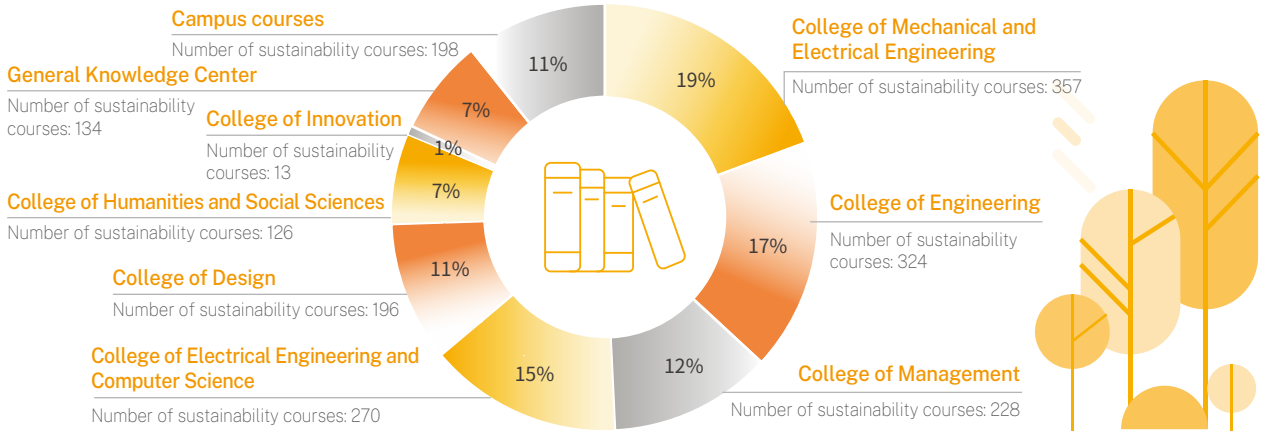
• Promotion of Sustainability Courses

The university actively promotes the concept of sustainable development by fully integrating it into course design and instructional content. Starting from the 2024 Spring semester (113-1), a “Sustainable Development Goals (SDGs)” field was added to course syllabi within the curriculum system. Instructors are required to indicate which SDG(s) their course aligns with. This initiative not only encourages instructors to incorporate sustainable development into their teaching, but also allows students to clearly identify how each course connects to global sustainability goals. It strengthens students’ understanding of sustainable development and promotes its continued integration across the campus – achieving a deep synergy between education and sustainability. A total of 1,846 sustainability-related courses were offered in the 2024 Spring semester (113-1).

- In 2024, the University Offers Academic Programs Related to Sustainability Education

Item	Course Title	
Academic Units Directly Related to Sustainability Education at the University	·Institute of Environmental Engineering and Management ·Department (and Graduate Institute) of Energy and Refrigerating Air Conditioning Engineering ·Department of Chemical Engineering and Biotechnology – Master’s Program in Biochemical and Biomedical Engineering	·Department of Architecture – Master’s Program in Architecture and Urban Design ·Department of Civil Engineering–Master’s and Doctoral Programs in Civil and Disaster Prevention Engineering
Sustainability-Related Programs Offered by the University	·Sustainable Environment Design Program ·Biomedical Materials Program ·Program for the Development of Solar Photovoltaic Technology	·Energy Conservation Technology Program ·Ecological Engineering and Civil Environment Program ·Optoelectronic Smart Manufacturing Program
Sustainability-Related Micro-Credential Programs Offered by the University	·Cross-Disciplinary Micro Program in Assistive Biomedical Technology ·Micro Program in Energy Materials ·Cross-Disciplinary Micro Program in Offshore Wind Power ·Micro Program in Woodcraft Manufacturing and Management ·Micro Program in Smart Energy-Saving Power Technologies ·Micro Program in Smart Rail Systems ·Micro Program in Green Energy and Energy Conservation	·Micro Program in Green Building ·Micro Program in Smart Manufacturing Management ·Micro Program in Circular Economy and Net-Zero Sustainability ·Culture, Sustainability, and Social Innovation – Social Practice Micro Program ·Urban-Rural Environmental Sustainability – Social Practice Micro Program ·Micro Program in Green Manufacturing ·Micro Program in Global Issues and Trends

- Number and Percentage of Courses Corresponding to SDG Targets by College



• Incentives for Teachers to Offer Sustainability Courses

The university revises its Flexible Teaching Performance Points Evaluation Table annually. Through 42 innovative teaching initiatives, it encourages and supports the development of sustainability-related courses. These include themed integrative course clusters, cross-disciplinary design thinking, game-based learning, inquiry-based instruction, and the adoption of OpenTextbooks in the classroom. The school has also implemented the “Regulations for Flexible Salary Payments for Outstanding Teaching Faculty” and established an incentive mechanism for teaching units participating in instructional innovation programs, aiming to motivate faculty and students to engage in sustainable teaching practices. In the 2024 academic year, 73 full-time and project-based faculty members received flexible teaching salary awards, totaling NT$9,756,000 in subsidies.

• Building a Cyclical Model for Teaching Improvement to Drive Educational Innovation

The university continues to optimize its teaching systems by recruiting high-quality faculty, promoting innovative teaching strategies, enriching digital resources, and ensuring instructional quality. It also integrates practical industry knowledge into teaching, refines pedagogical processes, and uses institutional research and feedback to evaluate effectiveness – ultimately helping students develop essential competencies and core skills.

Themed total courses

In the 2023 academic year, 7 departments participated, including: Department of Interaction Design, Department of Information and Financial Management, Department of Cultural and Creative Development, Department of Electronic Engineering, Department of Industrial Design, Department of Mechanical Engineering. A total of 32 faculty members and 3,120 student enrollments were recorded. These themed clusters are supported by partnerships with industry and government sectors. Notable collaborators include: Microsoft Taiwan, Prohong Info, Lextar Electronics, Taiwan Design Research Institute, and Quanta Computer. For example, in the Department of Interaction Design, the course module was built around the theme of “Digital Translation.” Through phased instruction, mid-term/final evaluations by industry partners, and guided project work, students developed ideas from concept to execution and on-site presentation. They were trained to convey design ideas through storytelling. A standout project, “Ji-Jhao’s Grand Adventure,” won the 2024 Taiwan Digital Media Design Gold Award. The project transformed literary works by Huang Chun-Ming into an interactive game, guiding players through experiences set in 1950s Taiwan. Students used storytelling, visual design, and interactive programming to complete their projects, which were refined under faculty and mentor guidance and recognized for innovation and creativity.

Diversified and innovative teaching model

The university continues to implement incentive programs such as flipped classrooms, generative AI applications, VR-integrated teaching materials, and game-based learning. These initiatives have resulted in the development of 96 innovative blended learning (hybrid) lesson plans, all focused on participatory learning. The average student satisfaction rate reached 85.7%, indicating strong support for the continued implementation of these teaching models. In response to the rapid development of generative AI, the university organized five workshop series, attracting over 200 faculty members from various institutions, and received considerable positive feedback. The university also launched the “Generative AI Tool-Integrated Teaching” program, with 20 participating instructors. Centered around ChatGPT, the program incorporated 29 generative AI (GAI) tools, including DALL·E 2, Toko, Gamma, and Conker, to develop highly interactive, composite teaching designs. More than 90% of students enrolled in these courses acknowledged that the use of generative AI tools increased their motivation for autonomous learning, encouraged them to deepen subject exploration, and effectively improved their learning outcomes.

MOOCs (micro online courses)

The university collaborates with partner institutions in the Taipei United University System to jointly offer MOOCs (Massive Open Online Courses). On the EWANT platform, the university continuously runs the “Entrepreneurship Rhapsody Trilogy” series, including: Prologue: My Era of Innovation, Chapter Two: Perspectives on Innovation and Entrepreneurship, Chapter Three: Passing Down Entrepreneurial Experience. These MOOCs have attracted 7,738 learners, with 4,486 successfully completing the course requirements. Among them, Prologue and Chapter Two have been designated as university-level interdisciplinary credit courses, available for inter-institutional enrollment within the Taipei United University System, and serve as core courses in the “Entrepreneurial Spirit” microprogram. In addition, the school continues to offer five all-English MOOCs on the FutureLearn international platform: “Internet of Things for Active Ageing,” “Application of AI Technology,” “Introduction to Lasers,” “Diffusion and Mass Transfer,” and “Sustainable Building and Energy Efficiency Development.” 5,019 foreign learners completed the program, of which 919 passed the course requirements.

• Transdisciplinary integration of information education to strengthen students' logical thinking

In order to enhance students' ability to apply programming to solve problems in their respective disciplines, the university promotes cross-disciplinary information technology education to strengthen students' computational thinking and design thinking, and offers AI courses suitable for students from non-IT backgrounds. In the 2024 academic year, the Department of Finance and the Department of Industrial Management received a subsidy of NT$1.62 million for the project "Application of Generative AI Technology in FinTech," and established 13 digital technology micro-programs, with a total enrollment of 2,201 students. In addition, 8 students from the Department of Interaction Design in the College of Design, after completing the "Multimedia Human–Machine Interaction Application and Design Micro Program" and the "Metaverse Micro Program," participated in the 2024 Smart Innovation and Cross-Disciplinary Integration Competition and won third place in the Body Interaction Technology category, as well as an Honorable Mention.

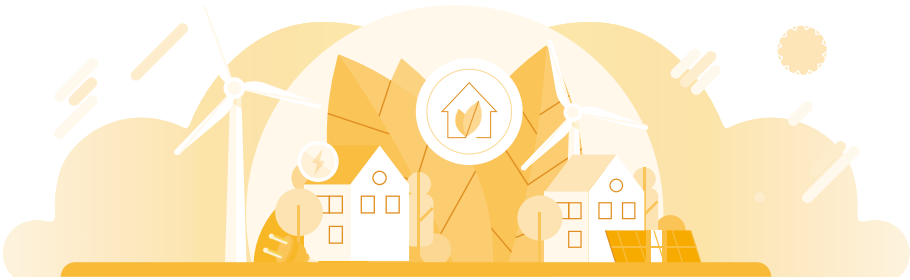
• Sustainability Teaching Case

Course Title	Climate Change and Greenhouse Gas Inventory
Instructor	Adjunct Assistant Professor Kuo Chien-Hung, Graduate Institute of Environmental Engineering and Management

This course begins with scientific findings from the IPCC AR6 report, guiding students to understand the significance of climate change and focusing on how organizations and countries calculate their greenhouse gas (GHG) emissions. The course integrates international methodologies such as the GHG Protocol, ISO 14064-1:2018, and calculation theories from IPCC 2006 and 2019 revisions, while also covering GHG calculation requirements issued by Taiwan's Ministry of Environment. Students complete a GHG emission inventory as part of the course. As commuting by faculty and students is a major source of transportation-related emissions at NTUT, the course includes a practical student commuting survey, through which students calculate the GHG emissions of their own commutes. This helps them gain hands-on experience in carbon inventory methods, understand GHG calculation theories, and grasp the characteristics of emissions from daily transportation. Additionally, the course closely aligns with the iPAS Net-Zero Carbon Planning Manager certification content administered by the Industrial Development Administration, Ministry of Economic Affairs. The instructor actively encourages students to pursue this certification, and many successfully obtain the iPAS license during the course.

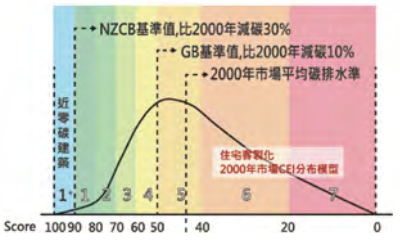
Course Title	Environmental Ecology
Instructor	Professor Chen Chih-Feng, Department of Civil Engineering

This course mainly explores how ecosystems function and the interactions between ecosystems and environmental factors. In terms of course design, in addition to lectures by the instructor, several group discussions are arranged to help students better understand ecology. In the first group discussion, each group selects a species and presents it through a 3-minute video. The second group activity involves discussing the selected species from the perspectives of the past, present, and future, and presenting the discussion as a poster. In the third group, the instructor assigns specific environmental issues. Students collect background information on the issue, analyze its ecological impacts, and create a presentation covering an introduction to the issue, examples of ecological effects, and suggestions for improvement. This year's environmental topics included the Hawaii wildfires, offshore wind turbines, algal reefs and LNG terminals, Antarctic ice melt, genetically modified foods, endocrine-disrupting chemicals, ocean acidification, and microplastics. Through these discussions, students not only learn about these issues but also gain insight into their effects on ecosystems. Additionally, the course introduces the concept of an ecosphere. Students may choose to create their own ecosphere and observe the relationships and functioning of producers, consumers, and decomposers in a small-scale ecosystem. The purpose of this small experiment is to show students that while creating an artificial ecosystem may be easy, maintaining its proper function is difficult – helping them appreciate the value of natural ecosystems.



Course Title	Assisting National Net-Zero Policy Promotion
Instructor	Professor Yen Chia-Ju, Department of Architecture

In response to global issues of climate change and greenhouse gas emissions, achieving net-zero carbon emissions has become a top global priority. In areas such as daily life, politics, business, and education, net-zero has become an essential carbon-reduction strategy. In March 2022, the National Development Council released Taiwan's 2050 Net-Zero Emissions Roadmap and Strategy, requiring all public buildings to achieve Energy Efficiency Level 1 or become nearly zero-carbon buildings by 2030. Building on the foundation of the Green Building Label system, Taiwan has developed a Building Energy Efficiency Rating System, establishing standardized methods for calculating, scoring, and labeling the energy performance of both new and existing buildings. This system is called the Taiwan Building Energy Efficiency Rating System (TBERS), which includes two major subsystems: BERS for public and non-residential buildings, and R-BERS for residential buildings. The newly established R-BERS defines Nearly Zero-Carbon Buildings (NZCB) as the highest level of building energy performance. Starting from the implementation of the Green Building Label in 2000, residential buildings achieving over 30% carbon reduction qualify as NZCB. This applies to both detached and multi-unit housing, creating a seamless connection between energy efficiency labels and the Green Building Label – making it a key highlight in Taiwan's energy-saving policies and the first step toward realizing net-zero buildings. According to the Ministry of the Interior's Net-Zero Building Roadmap, from July 2023, new public office and service buildings must achieve at least "New Building Energy Efficiency Level 2." For lodging buildings, the same requirement will apply starting in 2025. To implement the 2050 Net-Zero Emissions Action Plan, beginning that same year, all social housing and public urban renewal projects commissioned by the National Housing and Urban Regeneration Center will fully adopt the R-BERS Level 1 label system. Faculty members have contributed to compiling a practical teaching handbook and developing digital micro courses. Website: https://nzb.bers.tw/dmcourses/23



Course Title	Net-Zero Building
Instructor	Professor Yen Chia-Ju, Department of Architecture

The International Energy Agency (IEA) has called on countries worldwide to establish pathways toward net-zero carbon emissions. Taiwan has also launched its net-zero target timeline and action plan. For the building sector, the Building Energy Efficiency Rating System (TBERS) is a simple and effective evaluation tool specifically designed for the characteristics of subtropical climates and complex, diverse building typologies. To help students develop a solid understanding of sustainability and net-zero principles and equip them with the technical skills needed to evaluate, score, and label building energy performance, this course uses the 2024 edition of the TBERS handbook. The course guides students to:

(1) understand domestic and international net-zero carbon strategies
(2) assess the energy efficiency levels of new and existing buildings
(3) apply near-zero carbon design strategies for both new and existing buildings
(4) conduct a comprehensive analysis and synthesis of the energy efficiency mechanisms in architecture.

Course Title	Technology Innovation and Marketing Strategy
Lecturer	Associate Professor Chung Ming-An, Department of Electronic Engineering

This course centers on the development of technology startups, focusing on maximizing brand value and strategic marketing to enhance students' competitiveness in emerging industries. Integrating the STP model and SMART Strategy, students learn market positioning, customer analysis, and channel management. Through an On-the-Job Training (OJT) model, students engage in hands-on exercises and project-based learning to improve their skills in managing microenterprises.

The course has a wide-ranging impact: For students, interdisciplinary learning and teamwork strengthen problem-solving and collaboration skills, enhancing their employability in the tech sector. Additionally, the course offers students a networking platform for interacting with industry professionals and expanding professional connections. Participation in events like the Technical and Vocational Education Fair and the Asia-Pacific Sustainability Expo provides exposure to industry trends, encouraging students to explore and plan their careers while boosting self-directed learning.

The course yielded notable achievements. In 2025, under Professor Chung's guidance, students passed the U-Start Innovation and Entrepreneurship Program for the second time, becoming one of the few teams to receive funding in both phases.

The implementation of the "Technology Innovation and Marketing Strategy" course not only supported students' skill development and career progression but also fostered faculty professional growth and improved teaching quality. The multidimensional influence of the course helps cultivate a positive learning environment, achieving shared progress for students and teachers alike. This reciprocal transformation enhances the dynamism of the university's education system, preparing it for future challenges.

Course Title	Sustainable Thinking and Circular Design Introduction to Social Innovation Design Competition
Instructor	Lecturer Meng-Fan Huang, Department of Industrial Design

This course centers on the core concepts of “sustainable thinking” and “circular design,” incorporating a social innovation design competition to develop students’ creativity through structured learning and hands-on practice. The course is divided into three phases. First, students learn the basics of the Sustainable Development Goals (SDGs), circular design, and social design, and explore current trends through case studies. We collaborated with the Circular Taiwan Foundation to host in-person workshops discussing industrial and biological cycles, helping students gain practical understanding and application of circular economy principles. In addition, entrepreneurs from sustainability-focused businesses were invited to share real-world experiences, such as turning pineapple leaves into sustainable products and promoting them through crowdfunding and marketing, giving students insight into key elements of design-to-entrepreneurship. Next, the course moves into a Problem-Based Learning (PBL) phase. Students, working in teams, use innovation toolkits to research social and environmental issues through collaborative discussion and define SDG-aligned design challenges. They then develop innovative solutions. In the final phase, students use digital tools and prototype models to present their design concepts, refining them under the guidance of instructors. Students are also encouraged to participate in domestic and international design competitions to build practical experience, expand their global perspective, and develop soft skills such as teamwork, communication, and problem-solving.

Student teams have earned notable recognition in design competitions. For example, Equalia, a gender equality educational board game (by Liu Shu-Wei, Liao Chieh-Yu, and Tsai Nien-Yu), won the 2024 TIC100 Sustainable Innovation Practitioner Integration Award and the 2024 i-Design Competition Bronze Award. Targeted at children aged 10 to 12, the game helps them understand gender equality through gameplay and scenario simulations, teaching them how to respond appropriately and protect themselves. Another project, Let’s Summit (by Lin Yun-Chu and Lin Pei-Tzu), a trekking pole rental station, won the 2024 iF DESIGN STUDENT AWARD. Using a “rental over purchase” model, it reduces individual gear purchases, minimizes waste, and improves hiking safety. Additionally, Pawleaf, a fallen leaf-based pet waste pickup service (by Cheng Chu-Fang and Hsu Chi-Shan), earned an Honorable Mention in the 2024 Taiwan International Student Design Competition (TISDC) under the product design category. The project uses collected fallen leaves to produce biodegradable waste boxes, reducing plastic bag use and improving park sanitation. Through this course, students not only gain theoretical and practical knowledge of sustainable design but also validate their creativity through competition, with the hope that these experiences will inspire continued innovation for sustainability in their future design careers.

Course Title	Digital Music and Audio Design
Lecturer	Associate Professor Cheng Wen-Cheng, Department of Interaction Design

The “Digital Music and Audio Design” course incorporates digital audio technology, artificial intelligence (AI) music tools, interactive audiovisual design, and game soundtracks to cultivate students’ innovative application skills in the digital music field. This course emphasizes not only technical skill development but also how music and technology contribute to social sustainability, aligning closely with multiple United Nations Sustainable Development Goals (SDGs).

First, this course is directly linked to SDG 4: Quality Education. The curriculum covers AI music technologies (such as AI audio editing, speech synthesis, and virtual vocalist applications), Max for Live synthesizer design, and Adaptive Music applications. These offer interdisciplinary learning opportunities to cultivate students’ skills in digital music creation and interactive audiovisual design. Through industry expert workshops, hands-on training, and final project production, students gain exposure to cutting-edge technologies, enhancing both their creative capabilities and competitiveness for future roles in the evolving music industry.

Secondly, the course’s emphasis on AI applications in music and sound design aligns with SDG 9: Industry, Innovation, and Infrastructure. Technologies such as AI virtual singers, audio editing tools, adaptive music design, and FMOD equip students with innovative music production methods and allow exploration of AI’s potential in the digital music industry. Moreover, the use of software like Max for Live and Ableton Live fosters students’ abilities to design musical tools, promoting technological development within the music sector.

This course also corresponds with SDG 11: Sustainable Cities and Communities, particularly through sound design’s impact on public environments and the cultural and creative industries. For instance, the interactive audiovisual design techniques students learn can be applied in digital art exhibitions, game audio design, and smart city soundscape planning. Music technology here extends beyond entertainment to enhance urban cultural experiences and foster inclusive artistic innovation.

Finally, through final audiovisual project production, students explore areas such as AI-generated music, interactive audiovisuals, game soundtracks, and audio for radio plays, facilitating the integration of creativity and technology. This supports SDG 8: Decent Work and Economic Growth. The technical competencies developed in this course enable students to remain competitive in the digital content industry, promote the growth of the creative industries, and open up job opportunities in music technology.

In summary, through digital music technology and AI-driven innovation, “Digital Music and Audio Design” addresses SDG 4 (Quality Education), SDG 9 (Industry and Innovation), SDG 11 (Sustainable Cities), and SDG 8 (Decent Work), delivering a comprehensive learning experience while promoting the sustainable development of the digital music industry.

Course Title	Sustainable Engineering and Management
Lecturer	Assistant Professor Hsu Hsin-Wei, Department of Industrial Management

This course aims to cultivate students' understanding and practical application of low-carbon and sustainability management, raising awareness of carbon emissions and resource management while building competence in implementing sustainable practices across various organizations and contexts. Learning objectives include: understanding the concept and assessment methods of carbon footprints, mastering the principles and strategies of sustainability management, and analyzing real-world sustainability case studies to strengthen students' sense of responsibility and agency in sustainability efforts, while fostering active participation in social sustainability issues.

The curriculum explores both engineering and management dimensions of net-zero emissions, addressing the capabilities and knowledge required for industrial engineers under corporate sustainability. Management topics include: Corporate sustainability development, Sustainability and climate risk management, Carbon neutrality trends and response strategies, Green supply chain management, Sustainable finance, Climate-related financial disclosure (TCFD), Resource sustainability and industrial symbiosis, Sustainable economic decision-making. Engineering topics include: Sustainable supply chain design, Sustainability and energy policies, Emissions trading and carbon pricing, Green product design and evaluation, Green logistics and cold chain systems, Product-service systems, Smart green manufacturing and circular economy, Clean production theories and practical case studies.

Course Name	USR Ceramics Series Courses
Instructor	Professor Yi-Hui Wang, Department of Cultural Business Development

Professor Yi-Hui Wang offers a series of ceramic-related courses, designed progressively to help students develop the necessary skills and clarify their thinking in ceramic product design. The course aims to establish students' ability to independently develop creative craft product designs and explore the feasibility of connecting aesthetics in ceramics with market potential.

The course also invites professional ceramic artists from Yingge to provide guest lectures, expanding students' knowledge and depth in material usage and encouraging them to develop theme-based creative works. Following foundational training in ceramic forming techniques and knowledge, the course aligns with the university's USR Yingge Project, integrating themes of preserving Yingge's painted ceramic culture and revitalizing local industry. Students are guided to explore issues such as the challenges in Yingge's ceramic development, local industry decline, policies on regional revitalization, and perspectives on cultural sustainability and social engagement. By addressing topics related to craft revitalization and cultural sustainability, the course helps students connect craftsmanship with social and cultural issues, fostering motivation and awareness of cultural identity through painted ceramic empowerment.

Course Name	Theory of Cultural Heritage Preservation and Resource Application
Instructor	Associate Professor Han-Hsiu Chen, Department of Cultural Business Development

This course integrates with the “Real Skills of Fishing Villages” USR Project–focusing on coastal landscape conservation in Wanli Yehliu and sustainable fishing village culture. Students conduct cultural inventories of Yehliu’s fishing heritage and explore related issues including marine sustainability and ecological conservation. Topics include traditional vs. modern fishing and crabbing methods and their ecological impacts, as well as how contemporary fishery regulations relate to the livelihoods of local fishing communities. Key findings and content are transformed into exhibits for the “Sustainable Ocean Education and Cultural Experience Center” at Yehliu Elementary School.

Course Name	Cultural History
Instructor	Associate Professor Han-Hsiu Chen, Department of Cultural Business Development

The course features a guest lecture series on marine cultural conservation. Local experts engaged in long-term marine conservation and ecological restoration in the Yehliu area are invited to speak. These lectures help students understand marine ecosystems and species, while also highlighting the close ties between fishing village cultural development and changes in marine environments.

4-3 Sustainable Technology

• Management Approach

The university emphasizes deep integration with industry–academia collaboration as a key pillar of institutional development. To align with global educational and industrial trends and leverage its strengths in technical and vocational education, the university aspires to become a benchmark international sustainable technology institution. In recent years, the university has actively implemented the United Nations Sustainable Development Goals (SDGs) and fulfilled its University Social Responsibility (USR). It has built cross-university and interdisciplinary industry–academia service platforms and enhanced institutional incentives through policies, media promotion, and industry–academia conferences. These efforts aim to boost internal R&D capabilities, promote global partnerships, and provide the private sector with access to academic research outcomes. The university has also established various joint R&D centers to ensure that research results are implemented in real industry applications, aligning Taiwan's innovative R&D energy with globally leading industrial supply chains.

Industry–academia collaboration		
Policies/ Commitments	Deepen industry–government–academia collaboration to promote sustainable technologies and innovation, support corporate development in alignment with government policies, enhance industrial competitiveness and sustainable development, cultivate talent, and promote industry–academia-research partnerships.	
Responsible Unit	Industry and Education Department, Frontier Institute of Research for Science and Technology	
Goals and Actions		**Evaluation Mechanism**
Short-term (2 years)	1. Manage intellectual property rights and promote contractual mechanisms to improve economic benefits. 2. Organize public events to strengthen the linkage between the university and external resources. 3. Establish R&D units in energy, AI, and semiconductors to integrate resources and improve the R&D environment.	• Number and value of patents • Number and value of technology transfers • Number and value of industry–academia collaboration projects • Performance evaluations of R&D units
Mid-term (4 years)	1. Optimize the patent application and technology transfer procedures to enhance the value of R&D results. 2. Undertake medium and large-scale industry–academia collaboration projects to deepen long-term partnerships. 3. Build core facilities, integrate research teams, and promote technical collaboration in energy-saving and green energy sectors.	
Long-term (8 years)	1. Guide faculty in applying for relevant projects and matching enterprise needs with technology transfer collaborations. 2. Deepen international industry–academia collaborations, link campus research domains, and promote industry–academia contracting. 3. Integrate resources to expand platforms for co-governance, co-learning, and co-research, promoting sustainable societal development.	
Corresponding Standards	GRI: Formulate indicators SDGs: 7 Affordable and Clean Energy; 9 Industry, Innovation and Infrastructure; 12 Responsible Consumption and Production; 17 Partnerships for the Goals STARS: • AC 2: Learning Outcomes • EN 2: Student Orientation • EN 6: Assessing Sustainability Culture	

• Effectiveness of Industry–Academia Collaboration

Pragmatic and sustainable industry–academia R&D

In order to make R&D technology beneficial to the industry and develop technologies that meet sustainability-related issues and goals, we have strengthened the use of R&D results to promote economic growth, including information and digitization, information security excellence, precision health, power efficiency, and renewable energy. In 2021, we established the Foresight Technology Research Headquarters to connect the established cooperative teams to strive for large-scale industry–academia projects, allowing industry–academia and R&D to be more flexible; and in 2022, we were approved to establish the "National Taipei University of Technology Innovation Research Institute," received subsidies from the National Development Fund, and carried out diversified cooperation with enterprises, gathering professors' professional expertise, linking departmental integration teams to seek large-scale industry–academia projects from the government or institutions. We cooperated with enterprises, institutions, and the government, and are committed to smart manufacturing (cooperated with Delta Electronics, AUO, and Lite-On), smart transportation (cooperated with the Ministry of Transportation and Communications, Taiwan Railways, High-Speed Rail, and Taipei Metro to establish the Smart Railway Academy R&D Center; also cooperated with Elan and Taiwan Vehicle Corporation), medical care (cooperated with Taipei Medical University), and green energy and carbon reduction (established the industry–government–academia cooperation platform – Offshore Wind Power Engineering Research Center) and other cross-disciplinary resource introduction and integration.

Strengthening innovation and entrepreneurship capacity

The school has established a one-stop counseling and training mechanism to cultivate new start-up teams and introduce diversified resources through various channels to build an integrated technical service base in the service industry. In recent years, we have trained and developed the pre-education team to obtain more than NT$1 million in rewards from the FITI Innovation and Entrepreneurship Program of the National Science and Technology Council. In the past 3 years, we have received the U-start Innovation and Entrepreneurship Program subsidy from the Ministry of Education every year, and implemented the development plan of the incubation institution of the Ministry of Economic Affairs and the subsidy of the Ministry of Education to promote innovative entrepreneurship projects for technical and vocational schools, with a total amount of more than NT$5 million. The incubation and training have helped the enterprise to obtain 17 government projects in the past 5 years, and helped the enterprise to obtain the Ministry of Economic Affairs' Innovation Enterprise Award, and helped the enterprise to complete the NT$20 million investment matching program. In addition, the school has matched 15 teachers and students from start-up companies to work with the school every year. In the last five years, the school has trained 25 start-up companies and helped them apply for the TPEx. In the last three years, the school has helped 5 start-up companies to apply for the TPEx, and was ranked 4th (ranked 1st in the college and university category) by the TPEx.

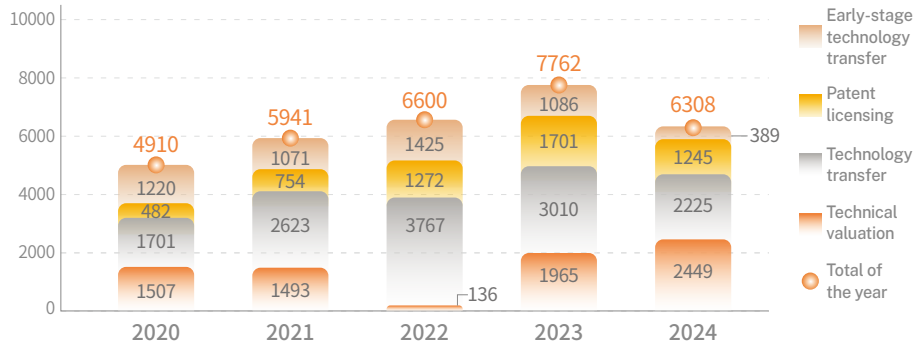
• Technology Transfer Effectiveness

In order to improve the commercialization of the R&D results of the school, the R&D Review Committee conducts a substantive review, and first confirms that the technology has market value. In addition, to improve the quality of patent technology transfer, consultation and advice are provided regarding patent applications and transfer contracts. In line with the government's policy encouraging new ventures, internal regulations, procedures, and incentive mechanisms for university-derived startups have been completed. Technology transfer revenues are reasonably allocated, different subsidy amounts are provided for different patents, and the university has amended the "Regulations on Feedback Standards for Full-time Teachers Engaging in Part-Time Positions or Secondment to For-Profit Enterprises or Organizations." When teachers take part-time roles at startups, they may receive equity as compensation, actively supporting faculty to contribute value through technology pricing while also nurturing the university's startups.

As of the end of 2024, a total of 8 faculty members had established 10 campus-derived startups and completed technology equity agreements, with a total of 56.363 million shares priced via technology, and 7.912 million shares allocated to the university. Each year, the university continues to assist campus research results in founding startups, guiding teaching and research teams to apply for at least 6 start-up project proposals to the NSTC or the Ministry of Economic Affairs.

From 2022 to 2024, the university has repeatedly won awards at the Taiwan Innotech Expo Invention Competition. In 2022, Professors Li You-Feng and Chung Ming-An won Gold and Silver Medals at the "2022 Innotech Expo." In 2023, Professors Wang Tzu-Chien and Chung Ming-An received Gold and Silver Medals, and Professor Chung Ping-Hsuan from the Department of Interaction Design won the Future Technology Award. In 2024, the university achieved its best historical performance at the "2024 Taiwan Innotech Expo Invention Competition," including: Gold Medal Patents – Professor Jen Yi-Chun (Department of Electro-Optical Engineering), Professor Hsiao Yao-Rong (Department of Vehicle Engineering), and Professor Li Shih-Hsiu (Department of Electronic Engineering); Bronze Medal Patents – Professor Li Shih-Hsiu (Department of Electronic Engineering) and Professor Chen Hsiao-Hsing (Graduate Institute of Environmental Engineering and Management); Additionally, Professor Chen Hsiao-Hsing also received the MSI Corporate Special Award.

2020–2024 Patent Technology Transfer Paid-in Revenue Statistics



• Promotion of Industry Exchanges

National Taipei University of Technology (NTUT), through the establishment of the “Innovation and Foresight Research College” and the “Frontier Institute of Research for Science and Technology,” has expanded collaborative research projects co-funded by industry partners. With support from the National Development Fund and the Act for Industrial Innovation, institutional flexibility has been enhanced, allowing for more adaptable funding mechanisms that attract greater participation from industry. In addition to resources injected by government agencies and enterprises, matching funds from the university’s own endowment have ensured stable resource allocation for innovation and sustained technical development –advancing the goal of sustainable and steady growth.

NTUT promotes smart manufacturing, digital transformation, and AI applications in the New Taipei Industrial Park. By helping manufacturers apply AIoT (Artificial Intelligence of Things) applications to extract insights from data and improve performance, the university integrates the expertise of its faculty to support AI transformation technologies, including sensors, edge computing, and cloud computing. A smart cloud-edge computing architecture has been implemented to support machine learning and deep learning in both edge and cloud environments. Responding to this major trend, NTUT teams from the College of Mechanical & Electrical Engineering and the College of Electrical Engineering and Computer Science have collaborated to analyze the real needs of manufacturers. Participating faculty provide full support to help companies introduce automated production lines or improve existing processes. Through step-by-step integration of sensors, edge devices, and cloud systems, NTUT assists businesses in taking the first step toward digital transformation. To date, NTUT has visited and provided consultation to over 1,000 companies, averaging 40 on-site consultations annually. Through these field visits and technical support, along with forums, seminars, talent cultivation courses, and vocational training within industrial zones, NTUT ensures its R&D results are closely aligned with industry needs, thereby accelerating the effectiveness of industry–academia collaboration.

• Case Study on Sustainability Technology

National Taipei University of Technology (NTUT), through its R&D Industrialization Platform and Foresight Technology Research Headquarters, has organized various types of media exposure, achievement presentation conferences, and industry–academia collaboration matchmaking events, integrating domestic and international resources in areas such as smart manufacturing (in collaboration with Delta Electronics and AUO), medical care (in collaboration with Taipei Medical University), and green energy and carbon reduction (in collaboration with the Union of Nine Major Engineering Associations). Each of these interdisciplinary collaboration projects has involved over NT$10 million in industry–academia cooperation funding. In addition, the university has deeply engaged with companies in the New Taipei Industrial Park, establishing a joint R&D service platform for industry, academia, and research, assisting SMEs in the park with digital transformation. Over the years, the number of companies visited and counseled has exceeded 1,000. Other activities include organizing at least 10 technical seminars or trend analysis forums each year, compiling technical promotion handbooks showcasing the research achievements of the university’s six colleges, and participating in large domestic and international exhibitions such as COMPUTEX, BIO ASIA, and the Taiwan Innotech Expo.

Collaborative Unit	Sunbird (USA)
Project Coordinator	Professor Liu Chien-Hung, Department of Computer Science and Information Engineering

National Taipei University of Technology has established a long-term partnership with the world-class software supplier Sunbird. The collaboration began in 2016, and following the completion of the first five-year project, which started in October 2019, the second five-year plan was launched in October 2024, with a total contract value of NT$41.85 million. The “Sunbird • NTUT Energy Management R&D Center” was established to help develop Taiwan’s DCIM industry chain and enhance its international influence.

The center mainly focuses on agile development, automated testing, code refactoring, performance optimization technologies and training, stress testing for DCIM software, and code quality analysis. Future plans include integrating AI into software development and data center applications.

The partnership is longstanding and built on mutual trust. Each year, NTUT invests in over 50 graduate students and 8 teams in joint R&D focused on data center infrastructure management and smart energy solutions. About one-third of Sunbird’s full-time employees are NTUT alumni.

Collaborative Units	National Science and Technology Council, Pioneer Material Precision Tech Co., Ltd., Hon Hai Precision Industry Co., Ltd.
Project Coordinator	Professor Chuang He-Chiao, Department of Mechanical Engineering

MIT's City Science Lab has been launched at NTUT, demonstrating strong interest in investing in Taiwan's outstanding talent and connecting internationally. Research topics include smart cities, urban data, autonomous vehicles, and future transportation. With the rise of generative AI, a core goal is to integrate robotics and urban data to conduct urban analysis and simulation, predict the impact of policies on people's lives, and thereby enhance urban operational efficiency and residents' quality of life. The lab aims to develop an interactive urban design indicator platform using data analytics to evaluate and improve urban design quality, promote sustainability, and create more livable cities.

This lab uses AI and big data to implement cutting-edge city science and citizen participation technology platforms, advancing applications related to future cities and autonomous vehicles, and has attracted interest from major corporations. In 2024, MIT's City Science Lab, together with Pioneer Material and Hon Hai (Foxconn), secured funding from the NSTC AIR Center Project.

Collaborative Unit	Lite-On Technology Corporation
Project Lead	Professor Lai Yen-Sheng, Department of Electrical Engineering

In 2024, the university and global optoelectronics leader Lite-On Technology jointly established the "Lite-On Technology – NTUT Joint R&D Center," focusing on the development and research of advanced materials, technologies, and innovative management models in forward-looking fields such as "smart energy" and "AI technologies." The goal is to establish an industry–academia cooperation model without gaps between academic learning and practical application, achieve joint innovation in technological R&D, and cultivate high-level R&D talent. The center involves deep collaboration with departments including Electrical Engineering, Electronic Engineering, Electro-Optical Engineering, Computer Science, and Materials Science.

Lite-On centers its strategic development around energy (energy conversion, energy saving, energy control, and energy storage), and promotes three major green solutions: green data centers, sustainable transportation, and high-performance infrastructure. NTUT holds a leading position in smart energy, AI research, automotive technologies, and innovation capacity. With this joint R&D center, both parties aim to combine strengths and long-term collaboration experience, advance high-level talent recruitment strategies, and foster more potential and innovative applications and solutions for next-generation R&D.

Collaborative Units	Industrial Technology Research Institute, Universal Scientific Industrial Co., Ltd.
Project Lead	Professor Hu Hsien-Lun, Graduate Institute of Environmental Engineering and Management

To support Taiwan's industry in achieving net-zero transformation and sustainable development, and to promote corporate ESG sustainable transformation, the "Net-Zero Carbon Emissions and Corporate Sustainability Center" was established. It focuses on three core areas: energy-saving and net-zero engineering technology, circular reuse technology for organic and inorganic resources and policy planning, and corporate net-zero and sustainability management. The center supports the implementation of the United Nations SDGs and the university's social responsibility by helping enterprises reach sustainability targets such as net-zero carbon, environmental protection, and social responsibility.

Professor Hu Hsien-Lun, Distinguished Professor at NTUT, serves as the Director of the Center. It was founded in response to the government's 2050 net-zero carbon emissions policy and global trends. It aims to work alongside enterprises to realize ESG goals and leverages NTUT's longstanding R&D strengths in fields such as net-zero engineering, green buildings, sustainable water environments, and circular resource technology. By building a collaborative platform integrating industry, government, and academia, the center seeks to promote a seamless academic-to-practice model, foster co-innovation in R&D, and cultivate advanced R&D professionals.

Collaborative Unit	Delta Electronics, Inc.
Project Lead	Professor Huang Ming-Hsi, Department of Electrical Engineering

The "Delta – NTUT Joint R&D Center" collaborates with faculty and students from the Electrical Engineering and Mechanical Engineering departments to engage in application research on power electronics. The focus is on energy conversion, storage, and zero-carbon emission technologies. The collaboration integrates expertise in power electronics, motor control, battery management, and thermal analysis, applying multiphysics simulation software for system design and validation using specialized equipment. The goal is to accelerate industrial upgrades and commercialization of research outcomes. This cross-disciplinary cooperation between students, faculty, and engineers aims to align research with industry needs, train professionals skilled in both practical and simulated environments, and create a win-win for academia and industry. The total investment in this collaboration exceeds NT$10 million.

The center also incorporates the concept of "Digital Twin," building a multiphysics simulation environment. With advanced virtual design, it allows for performance and behavior prediction during the design phase, ultimately reducing product development time and enhancing product quality.

05

Low-Carbon Campus Management

5-1 Green Landscaping

The university's campuses include the Taipei campus, Wanli campus, and Guishan campus. Among them, the Taipei campus has been ranked world No. 1 in the high-rise university category by the UI GreenMetric World University Rankings for four consecutive years. The Wanli campus is the largest in area and remains undeveloped. The entire site is currently preserved as natural forest, with rich natural ecosystems and biodiversity. It is also the first resting and nesting site in Taiwan for winter migratory birds crossing the ocean from the Asia-Pacific region. In the future, small, low-density zones will be selectively developed as testing fields for green energy development and ecological engineering validation. The Guishan campus is relatively small and also remains undeveloped. In the future, it may serve as an experimental field for carbon neutrality, aligning with the university's ongoing efforts toward sustainable development.

• Management Approach

Ecological and Resilient Campus		
Policies/ Commitments	The university adopts Taiwan's Green Building and Green Decoration Evaluation Systems to enhance energy efficiency in campus buildings, prioritize green procurement of building materials, and improve green building standards. It also aims to increase ecological awareness and engagement among faculty and students, while preserving and promoting campus biodiversity to create a sustainable campus environment.	
Responsible Unit	Office of General Affairs	
Goals and Actions		**Evaluation Mechanism**
Short-term (2 years)	1. Prioritize the use of green building materials and promote environmental sustainability. 2. Conduct ecological surveys of the campus to document plant, animal, and insect species.	· Quantity of materials meeting green building material standards · Species lists and numbers
Mid-term (4 years)	1. Apply Taiwan's green building and green renovation evaluation systems and encourage active participation from faculty and students. 2. Conduct regular biodiversity surveys and draft manuals for greening and ecological conservation.	· Proportion of certifications obtained · Plant growth performance and rates
Long-term (8 years)	1. Continue using green building materials, promote a sustainable campus, and establish a green campus culture. 2. Prioritize native plants in greening projects to create habitats suitable for wildlife.	· Third-party certifications · Species monitoring and related data
Corresponding Standards	GRI: GRI 301 Materials; GRI 304 Biodiversity; GRI 308 Supplier Environmental Assessment	
	SDGs: 11 Sustainable Cities and Communities; 12 Responsible Consumption and Production; 13 Climate Action; 14 Life Below Water; 15 Life on Land	
	STARS: · OP 3: Building Design and Construction · OP 4: Building Operations and Maintenance · OP 5: Building Energy Efficiency · OP 9: Landscape Management · OP10: Biodiversity	

• Environmental Green Landscaping Status

Due to urban development and road construction, NTUT's Taipei campus is divided into the East, West, and South campuses, in addition to the Linsen campus and the newly added Jianbei campus. Among these, the newly completed Pioneer International R&D Building and Chengpu Building in the South and Linsen campuses, although each site is small and accommodates only one building, were all designed and constructed in accordance with the latest green building and green coverage regulations at the time of planning.

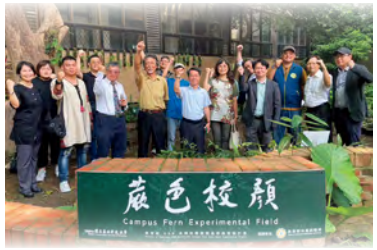
The East campus serves as the main dormitory area and sports field of the university. The dormitories are currently being reviewed under the "New Dormitory Movement" to improve public space usage and surrounding landscaping. As for the sports field, the location of the track and field is being adjusted, and a new academic research building and multifunctional activity center will be constructed. All new buildings are also being designed in line with the latest green building and green coverage regulations.

The West campus, which houses the university's main teaching, research, and administrative buildings, is undergoing continuous campus environment improvements such as tranquil spaces and campus pathways. As the first university in Taiwan to install large-scale permeable pavement on campus, NTUT continues to introduce various civil and environmental engineering techniques in hopes of becoming a model "sponge campus."

• Biodiversity

Twenty years ago, NTUT began promoting ecological restoration at the green gate and ecological waterscape area located at the southwest corner of the Architecture Department building, bringing nature back to campus. Over time, this area has undergone natural ecological succession in the heart of the city, gradually enriching its biodiversity, and helping the university earn the title of "World's No.1 High-Rise Green University" for several consecutive years.

In 2023, Professors Huang Chih-Hung, Chen Zhen-Cheng, and Shao Wen-Zheng of the Department of Architecture, along with Ph.D. student Fu Ling, collaborated under the professional guidance of Dr. Huang Yao-Mou from the Taiwan Forestry Research Institute to launch the "Fern-Colored Campus" project. With support from then-General Affairs Division Construction Team Chief Director Li Dong-Ming, faculty and students from the Graduate Institute of Building and Planning personally created a green space dedicated to native Taiwanese ferns on NTUT's campus. Unlike traditional garden design, this project does not emphasize ornamental landscaping but focuses on the classification and cultivation of native ferns to build an ecological research base.



Currently, the fern nursery has collected over 50 species of native Taiwanese ferns, including rare and endemic species such as Lindsaea orbiculata, Cyclosorus parasiticus, Adiantum spp., Platycerium spp., Equisetum spp., Bolbitis spp., Pseudo-diplazium spp., and Isoetes taiwanensis. These have added even more ecological richness to this century-old university.

This project is not only an important milestone in NTUT's green development but also aims, through scientific documentation and growth tracking, to embed the concept of biodiversity into the urban fabric, offering new potential for Taiwan's urban ecological landscape.

• Campus Information

The total campus land area is 1,639,771.27 square meters (163.9 hectares), of which the Taipei campus accounts for 96,537 square meters (9.6 hectares), the Wanli campus 1,516,663.7 square meters (151.6 hectares), the Guishan campus 1,767 square meters (0.1 hectares), and the Caotuo land 24,803.57 square meters (2.4 hectares). All teaching and research activities are conducted at the Taipei campus. The Wanli and Guishan campuses remain undeveloped. The Wanli campus is a natural forest area managed organically without human intervention. The Guishan and Taipei campuses, located in densely populated urban areas, are managed using traditional methods. The Caotuo campus is planned to become a Smart and Green Energy Industry Co-Creation Base, advancing toward smart industry, smart living, and sustainable development.

• Arts and Cultural Park renovation project

The Arts and Cultural Park renovation project was completed and officially opened on November 22, 2024. The park's walkways were built using permeable concrete, and the garden areas were planted with a large amount of multi-layered landscape vegetation. This significantly improved drainage and soil permeability within the original site, helping to achieve the university's goal of overall water retention across the campus. Additionally, the ground-floor corridors of the first, second, and fourth teaching buildings were completed, improving natural lighting and ventilation, and significantly reducing the need for daytime lighting and air conditioning, thus contributing to the university's daily energy-saving objectives.

5-2 Energy Management

• Management Approach

Energy Management		
Policies/ Commitments	Combining the latest technology and smart management, we promote the application of energy-saving and renewable energy, aiming to create a low-carbon, comfortable campus environment while actively developing renewable energy technologies to achieve the goals of sustainable development.	
Responsible Unit	Office of General Affairs	
Goals and Actions		Evaluation Mechanism
Short-term (2 years)	1. Improve and expand the energy monitoring system to accurately grasp the energy consumption of each region. 2. Renovation or renewal of facilities to stabilize the power generation of renewable energy.	• Energy consumption data • Renewable energy power generation
Mid-term (4 years)	1. Use cloud system to analyze energy consumption, promote power saving management, and encourage participation. 2. Roofing solar energy systems are added to promote renewable energy. 3. Establish energy storage systems to improve energy efficiency.	
Long-term (8 years)	1. Continue to introduce new energy-saving technologies to improve the building environment and ensure comfort and safety. 2. Develop smart grids to ensure the stable operation of critical buildings in the event of a disaster.	
Corresponding Standards	GRI: GRI 302 Energy; GRI 305: Emissions	
	SDGs: 7 Affordable and Clean Energy; 11 Sustainable Cities and Communities; 12 Responsible Consumption and Production; 13 Climate Action	
	STARS: • OP 1: Emissions Inventory and Disclosure • OP 2: Greenhouse Gas Emissions • OP 6: Clean and Renewable Energy	

• GHG Inventory

To implement GHG management and align with international carbon reduction and net-zero targets, Taipei Tech has been working to create a low-carbon campus environment. Starting in 2023, the University has commissioned the Foundation of Taiwan Industry Service to assist in auditing and monitoring its GHG emissions. To ensure the accuracy, completeness, and credibility of the audit data, GHG materiality assessment, emission source identification, and auditing work are conducted in accordance with the international standard ISO 14064-1:2018. The baseline data obtained serves as the foundation for the University's GHG management and the implementation of carbon reduction strategies. In order to create a low-carbon environment, the school has adopted multiple actions, including implementing energy management policies, replacing energy-saving lights, replacing old air conditioning, improving the energy efficiency of heat pumps and transformers, using renewable energy, building solar panels, and building campus smart energy monitoring systems, to achieve the goal of a low-carbon campus.

2024 GHG Emissions Results

Direct Greenhouse Gas (GHG) Emissions								
Item	CO2	CH4	N2O	HFCs	PFCs	SF6	NF3	Total GHG Emissions
GHG Emissions (metric tons/year)	13.279	0.078	0.246	0.000	0.000	0.000	0.000	13.603
Emission Share by Gas Type (%)	1.88%	98.09%	0.03%	0.00%	0.00%	0.00%	0.00%	100.00%

Summary Table of Greenhouse Gas (GHG) Emissions									
	Scope 1				Scope 2	Scope 3			
Emission Type	Stationary Combustion	Process Emissions	Mobile Combustion	Fugitive Emissions	Indirect Emissions (Purchased Energy)	Employee Commuting	Student Commuting	Employee Business Travel	Total Emissions (CO_2e)
Emissions (metric tons CO_2e/year)	5.404	0.000	8.199	0.000	9,916.885	771.722	3,026.666	867.158	14,596.033
Percentage (%)	0.03%	0.00%	0.05%	0.00%	67.94%	5.29%	20.74%	5.95%	
Category Emissions (metric tons CO_2e/year)	13.603				9,916.885	4,665.546			
Category Share (%)	0.09%				67.94%	31.97%			

Note: According to Article 2, Paragraph 1 of the Regulations for the Registration and Management of Greenhouse Gas Emissions Inventories, greenhouse gas emissions shall be expressed in metric tons of carbon dioxide equivalent (metric tons CO_2e) and rounded to the third decimal place.

Category 1: Includes campus lawn mowers, official vehicles, gas/liquid cylinders, and septic tanks.

Category 2: Includes purchased electricity (from Taiwan Power Company).

Category 3: Includes surveys on employee commuting, student commuting, and employee business travel.

• Energy Management

Energy Usage Status

Energy Consumption	2022	2023	2024
Total Electricity Consumption of Taipei Campus (GJ)	67452.03	72796.02	72268.79
Total Gasoline Consumption (GJ)	135.43	190.03	173.78
Total Diesel Consumption (GJ)	204.16	37.85	3.60
Total Energy Consumption (GJ)	67791.62	73023.90	72446.18
Campus Floor Area (m^2)	234833.75	234833.75	239657.93
Energy Intensity (GJ/ m^2)	0.2887	0.3110	0.3023

Note 1: The calculation scope only includes teaching and research service areas, all located within the Taipei campus.

Note 2: Energy conversion coefficients used: electricity (0.0036 GJ/kWh), gasoline (0.033 GJ/L), and diesel (0.036 GJ/L).

Electricity Consumption per Unit of Floor Area in the Past Three Years

	2022 years	2023 years	2024 years
Total Electricity Consumption Taipei Campus (kWh)	18,736,676	20,221,117	20,074,665
Electricity Usage Intensity (EUI)	79.79	86.11	83.76

Note 1: EUI formula: Total electricity consumption (kWh) ÷ Floor area (m^2).

Note 2: The campus's electricity mainly comes from external purchases through Taiwan Power Company (TPC). The electricity consumption data is based on TPC billing statements and includes the main areas of the Taipei campus, such as the East Campus, West Campus, and the Pioneer Building.

• Energy Conservation and Carbon Reduction Measures

Power Monitoring system

The main substation and branch substations in each building at Taipei Tech are equipped with digital meters for various loads. Through the campus network in each building, electricity usage data is transmitted back. In addition to monitoring real-time electricity usage and recording usage reports, the system can also be set to offload equipment, such as air conditioning units, when usage exceeds preset limits.

Light control system

Lighting control modules are installed on the lighting circuits of all buildings, and the lighting control status is integrated into the newly established central monitoring system via communication. Infrared motion-sensing modules are installed in corridors, stairways, and restroom areas within the buildings to control the lighting on and off. The system also allows for scheduling of lighting equipment and displays the on/off status of the lighting circuits both on-site and at the monitoring end. The lighting control system can be operated and managed through the Central Building Energy Management System (BEMS). The lighting control system has been completed in existing buildings such as the Administration Building, Library, Integrated Technology Complex, Hong-Yue Technology Research Building, and the Department of Materials and Mineral Resources Engineering. Set lighting time. Replace the lighting switch buttons with communication switch buttons, allowing the lights to be turned on or off at the site.

Energy-saving improvement of air conditioning system

Replace old air conditioning units with high-efficiency new models, and install variable frequency drives on the outdoor air handling units to improve system efficiency and reduce power consumption. By utilizing natural ventilation for cooling, the load on the air conditioning system is significantly reduced. Pumps and chiller units are operated in coordination, and a monitoring system is implemented to automatically adjust energy-saving management for the air conditioning units. The buildings improved include the Administration Building, Library, and Chiang Kai-Shek Memorial Hall. In addition, all split-type air conditioners have been equipped with energy-saving chips, which control the minimum room temperature to not fall below 25°C. Furthermore, the air conditioners automatically turn off every 2 hours, requiring users to manually restart them if continued operation is desired.

Energy Management Policy

The University has established an energy management policy to encourage energy conservation. If the actual electricity consumption of any department is lower than the previous year's consumption, one-third of the cost of the reduced electricity usage will be added to the department's budget for the following year. Conversely, if the consumption exceeds the previous year's level, one-third of the cost of the excess electricity usage will be deducted from the department's budget for the following year.

Lighting energy-saving improvement

The lighting across the entire campus, including both traditional magnetic ballast T8 fluorescent lamps and electronic ballast T5 fluorescent lamps, has been replaced with high-efficiency LED energy-saving lights. Improvement method: An investigation of the existing lighting fixtures in the space is conducted first, followed by measuring the on-site illuminance. Based on the type and location of the current fixtures, an evaluation is made to determine the specifications for replacing the lights. Computer simulations are then used to decide the positions and number of fixtures required. High-efficiency, low-glare LED lights with energy-saving labels are selected for replacement.

Elevator braking energy recovery system

The active power regeneration system effectively operates during the momentary surge in DC link voltage, switching excess energy back to the power grid. This method does not require external braking resistors and effectively resolves the issue of load energy. A total of 7 units have been installed, including the Administration Building, the General Studies Building, the Guanghua Building, and the Third Academic Building.

Heat pump system

The students' dormitories in Dongshu Campus 1 and 2, and the students' dormitories in Hsin-Bei Industrial Vocational High School are equipped with hot water for the students to take a shower.

Power supply system

Replace the old transformers used in the existing power supply system of the dormitory with non-crystalline ferrite core transformers to reduce long-term power consumption and further reduce greenhouse gas emissions.

• Renewable Energy

Taipei Tech actively promotes renewable energy. As of 2023, a total of 191.44 kWp of solar power generation systems have been installed on the rooftops of buildings. The new construction projects at the East 2 Campus and executive staff dormitories have also planned for the installation of solar panels and other solar energy equipment. Over a decade ago, solar panels with a total capacity of 82.68 kWp were installed on the roof of the Integrated Technology Complex. Currently, they are used for teaching and research purposes by faculty members from the Department of Electrical Engineering, with the generated electricity integrated into the building's power supply. Through active maintenance, the system continues to maintain good power generation efficiency.

In addition to the rooftop solar photovoltaic panels on the Integrated Science and Technology Building with a capacity of 82.68 kWp, a 9.76 kWp solar photovoltaic system was installed on the rooftop of the Pioneer International R&D Building in 2020, and a 99 kWp solar photovoltaic system was installed on the rooftop of the library in 2021. The generated electricity is directly connected to the low-voltage system of the respective buildings for use.

・2024 Renewable energy power generation

	Roof of the Integrated Technology Complex	Roof of Pioneer International R&D Building	Roof of the Library	Total
Solar power generation (kWh)	62,216	9,811	69,882	141,909

• Campus Green Buildings

Adopt the green building standard design to build new buildings

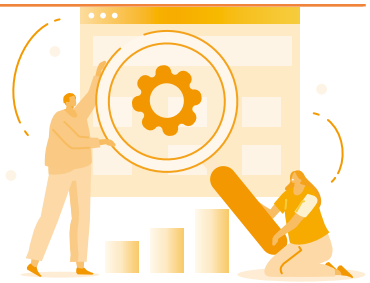
In the past five years, Taipei Tech has constructed buildings such as the Pioneer International R&D Building, Chengpu Building, and planned buildings including the Chicony Building and Alumni Sports Center. All of these buildings were designed and constructed according to green building regulations at the time of applying for building permits. The operation and maintenance of the University's buildings are managed according to internal repair procedures and the building interior decoration management regulations, with the use of green building materials in compliance with legal requirements for a certain percentage. Among them, the Pioneer International R&D Building obtained the Green Building Candidate Certificate and was awarded the Green Building Label in 2021; the Lung-Yu Technology Building (Chengpu Building) received the Green Building Candidate Certificate and was awarded the Silver-level Green Building Label in 2022; and the Everlight Building received the Green Building Label in May 2023.

Green building materials for architectural decoration

Some of the University's buildings require renovation due to their age and outdated hardware. In order to better achieve the goal of environmental sustainability, the university incorporated the use of sustainable green building materials during the planning and design phases of several major renovation projects, including the B1 Space Renovation of the General Education Building (2022), the Classroom Renovation of the Second Teaching Building (2023), the Interior Renovation of the Lung-Yu Technology Building (2024), and the Classroom Renovation of the Third Teaching Building (2024). These materials were also implemented during the actual construction phases. The projects were completed and put into use in June and October 2023, and June and September 2024, respectively.

During construction, all renovation projects applied for Green Decoration (GD) Certification from the Taiwan Green Decoration Development Association. The association assessed the use of certified healthy green building materials throughout the construction process, based on 28 indicators across four evaluation phases, along with four indoor air quality testing standards.

1. Formaldehyde (HCHO) in the space <0.07ppm.
2. Total volatile organic compounds (TVOC) in the space <0.53ppm.
3. Suspended particulate matter (PM10) in the space <75μg/m^3.
4. Fine particulate matter (PM2.5) in the space <35μg/m^3.



After evaluation, all the renovation projects met the specified indicators and were awarded the "GD Green Decoration Certification – Gold Level."

• Sustainable Transportation

The university promotes sustainable commuting by encouraging faculty and staff to use public transportation or switch to electric scooters. This is done through internal communications, subsidies for public transit use, and incentives for purchasing or replacing traditional motorbikes with electric ones. Since 2023, the university has conducted carbon footprint assessments for staff commuting, with the sustainable commuting rate rising from 70% in 2023 to 74% in 2024. Starting in 2024, the university also began conducting carbon assessments for faculty and staff business travel data from the previous year, in order to evaluate and refine its carbon-reduction strategies.

5-3 Waste management

General Waste

- The university implements a “no ground littering” policy. General waste is managed by a contracted cleaning company, which places designated garbage bins throughout the campus each day. Waste is bagged and transported to the campus waste collection area, where it is picked up by a waste disposal company and sent to an incineration facility – with at least two collections per day.
- In 2024, the official opening of the Longyu Building at the Linsen Campus led to an increase in the university’s total waste output, along with a corresponding rise in the volume of recyclables.
- To address this, the university increased the number of recycling personnel and adopted a two-stage recycling classification system – the first stage at the garbage bin level, and the second using sorting carts on site – to improve both the quantity and accuracy of recyclable material recovery.

Total General Waste in 2024		
General garbage (tons)		575
Resource recycling including kitchen waste (tons)	Kitchen waste (tons)	2
	Tree leaves (tons)	0
	Paper (tons)	8
	Soft plastic (tons)	3
	Hard plastic (tons)	3
	Other (tons)	10

The removal or reuse of construction waste

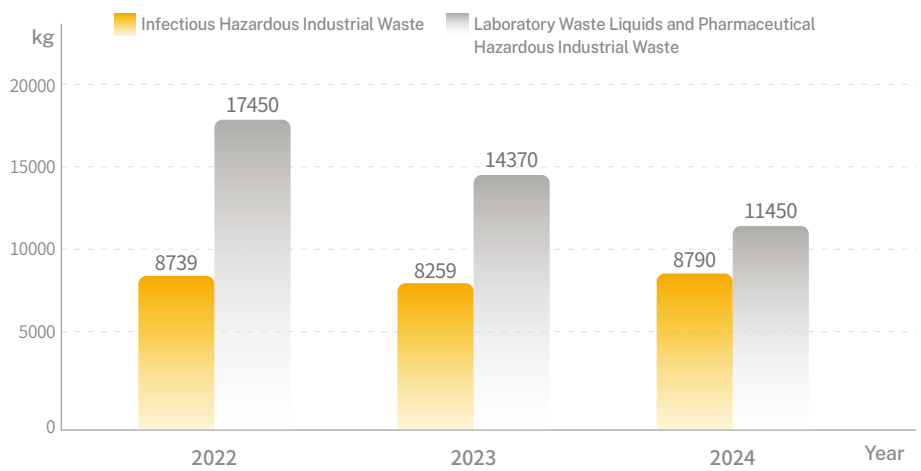
To enhance environmental sustainability, all new construction projects at the university over the past three years have been planned with on-site earthwork balancing as a priority. This approach reduces transportation-related environmental pollution and carbon emissions. Any surplus earth and rock is transported for reuse at the Port of Taipei. In the past three years, all new construction projects at the university have been planned to prioritize on-site earthwork balancing to reduce pollution and carbon emissions caused by transportation. Any surplus earthwork is transported to Taipei Port for reuse. For example, in the Chengpu Building New Construction Project (6,000 cubic meters), all excavated earth and rock were sent to Taipei Port for reuse. The “Rongyuan Landscape Improvement Project,” completed in November 2024, produced 420 cubic meters of earthwork, of which 245 cubic meters were balanced on site and 175 cubic meters transported off site. The “Presidential and Official Dormitory New Construction Project,” expected to begin in April 2025, is estimated to generate 2,917 cubic meters of earthwork, with 494 cubic meters balanced on site and 2,423 cubic meters transported off site. The “East Campus Phase II Teaching and Research Building and Multipurpose Activity Center New Construction Project” is currently under public tender. The project is expected to generate: Building A (Activity Center) – 39,540 cubic meters; Building B (Teaching and Research Building) – 23,480 cubic meters; with 88 cubic meters balanced on site for these buildings, and 3,858 cubic meters generated across the area, of which 2,555 cubic meters will be balanced on site. All remaining earthwork is planned to be provided for the land reclamation project at Taipei Port.

Hazardous Waste Management

In terms of hazardous waste management, the university regularly removes and recycles laboratory waste liquids, discarded chemicals, and infectious waste in accordance with the "Laboratory Waste Disposal Procedure of National Taipei University of Technology," by commissioning licensed public or private waste disposal companies approved by the Ministry of Environment. Due to the large number of laboratories, and to effectively control laboratory waste liquids and prevent environmental contamination, the university has established a 10-ping hazardous waste liquid storage room equipped with flammable gas detectors, vapor collection systems, and activated carbon filtration units. These systems effectively collect gaseous emissions during storage, which are then filtered through activated carbon before being discharged into the atmosphere. Annual monitoring and maintenance of pollution control equipment is conducted to fulfill the university's responsibility for campus and environmental protection.

According to statistics from 2022 to 2024, the volume of laboratory waste liquids and discarded chemicals has steadily decreased from 17,450 kg in 2022 to 11,450 kg in 2024, showing progress in the university's campaign to reduce chemical use. As for infectious waste, the amount removed has remained under 8,800 kg over the past three years, similar to prior years. However, fluctuations occur due to laboratory space being vacated when faculty members retire or change research fields, leading to variations in infectious waste volumes.

Amount of waste disposed of in campus laboratories during 2022–2024



Air Quality Testing

- In accordance with the government's promulgation of the Indoor Air Quality Management Act, since 2014, the university library has been one of the first announced locations under this act and is required to carry out regular testing of indoor air pollutant concentrations every two years. Additionally, to promote effective indoor air quality management, the library has appointed a dedicated indoor air quality maintenance manager. The latest air quality testing data for the library is from July 2024 (sampling dates: July 4–5, 2024). All results comply with regulatory standards. Please refer to the table below for the test results. (CO_2 779 ppm, PM10 11 μg/m³, formaldehyde 0.02 ppm, bacteria 255 CFU/m³)

- Indoor Air Pollutant Testing Results

Test Dates: July 4–5, 2024			
Item	Average Measured Value	Inspection Method	Standard Value
CO_2	779 ppm	NIEA A448.11C	1000 ppm (8-hour value)
PM_{10}	11 μg/m³	NIEA A206.11C	75 μg/m³ (24-hour value)
HCHO	0.02 ppm	NIEA A705.12C	0.08 ppm (1-hour value)
Bacteria	255 CFU/ m³	NIEA E301.15C	1500 CFU/ m³ (Highest value)

5-4 Water Resource Management

The university has a total of 11 water meter sets supplying 26 buildings. The Pioneer International R&D Building uses separate water meters by floor, covering individual floors and public areas, with a total of 16 water meter sets. The school has applied for the “Smart Water Butler” service from the tap water company to check the latest usage status and detect any abnormal water leakage. In addition, a water usage and water level monitoring system has been installed to implement a comprehensive campus water conservation plan. A total of 32 smart water meters have been installed to enable real-time analysis of water usage for each meter and building, as well as monitoring the water levels in upper and lower water tanks and the operation of booster pumps. Real-time report analysis through the monitoring system enables tracking and comparison of water usage across different zones, effectively managing consumption and promptly identifying leaks. Existing water-use equipment is fitted with water-saving gaskets and devices, and annual restroom renovation projects consistently utilize water-saving certified equipment. Newly installed water-use equipment features automatic flush valves and faucets with water-saving certifications. Water-use equipment is labeled with water-saving stickers to reinforce water conservation awareness. Landscape irrigation water is gradually being transitioned to an automatic timed drip irrigation system, which not only saves labor but also significantly conserves water.

• Water Consumption

The university’s water facilities, including faucets, toilets, and urinals, all use equipment with water-saving certifications. Small convenience stores post water-saving publicity stickers to enhance water-saving publicity. Facilities are also required to be equipped with shock-resistant flow restrictors with automatic water shutoff functionality to minimize water loss during earthquakes. Additionally, fire pumps must be fitted with anti-leak features to prevent significant water leakage caused by earthquakes or improper use. The campus’ landscape gardening system uses automatic control devices to reduce the massive water consumption caused by manual water pipes. In addition, the water consumption in 2024 will increase compared to 2023, mainly due to the implementation of multiple projects on the campus in 2024, which will increase the area of greenery and planting on the campus, as well as the construction of a landscape water pond. Although the water consumption will increase slightly, it will also bring the effect of cooling down the campus.

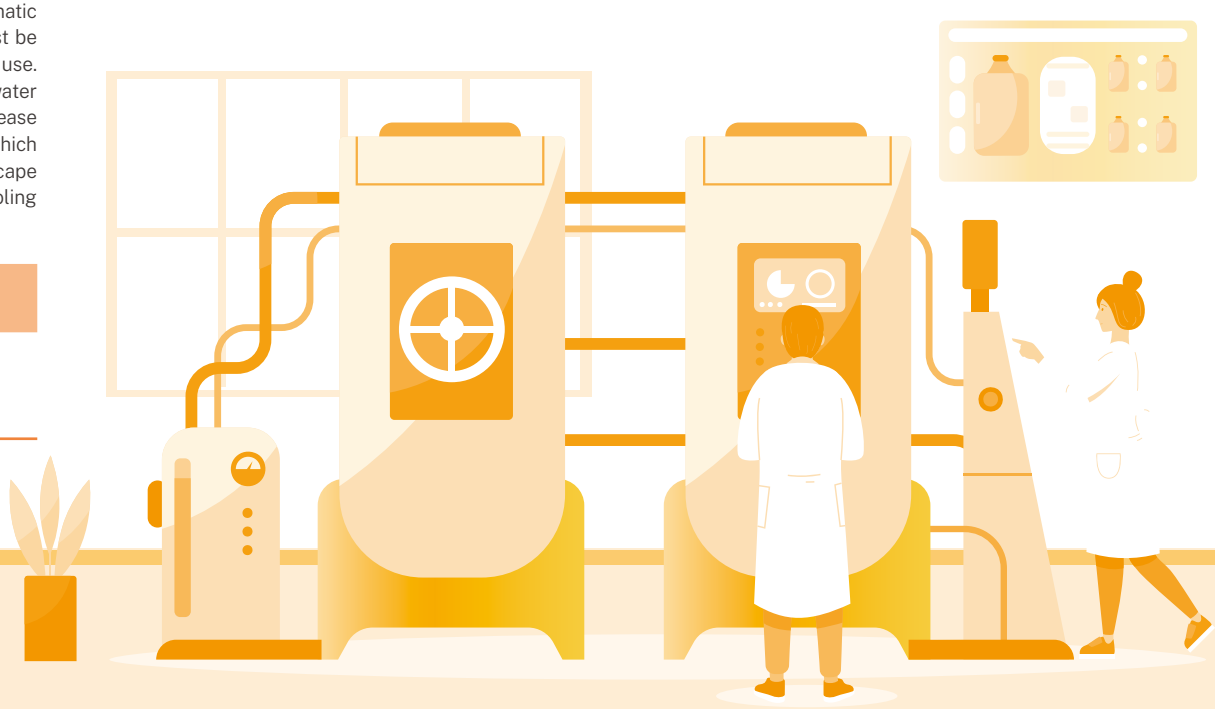
	2022	2023	2024
Total water consumption (ML)	241.06	245.45	278.28

• Storm water management

The Third Teaching Building is equipped with a rainwater harvesting system that collects rooftop rainwater for use in plant irrigation and toilet flushing. The rooftop rainwater harvesting system of the Fourth Teaching Building functions similarly. In addition, the newly constructed Jingyi Space Project will also incorporate a rainwater harvesting system for plant irrigation. Recently completed buildings such as the Everlight Building and the Pioneer International R&D Building also reuse rooftop rainwater for plant irrigation. Permeable pavements are widely used throughout the campus to achieve the goal of water retention. In certain areas, such as the rainwater raft foundation of the Joint Science Building, surface water is collected in rainwater storage tanks to supply ecological ponds and provide water infiltration for base retention during dry periods.

• Sewage Management

All chemical waste liquids from campus laboratories are collected in designated containers. Since 2011, the Taipei City Government Sewerage Systems Office has approved the inclusion of laboratory washing water into the public sewer system.



06

University Social Inclusion

6 University Social Inclusion

• Management Approach

University Social Responsibility			
Policies/ Commitments	Strengthen campus-wide promotion to make USR a public movement. Starting from local needs, incorporate USR concepts into professional and interdisciplinary courses to promote the spirit of professionalism, engagement, and altruism among faculty and students.		
Responsible Unit	Campus Sustainability Center		
	Goals and Actions		**Evaluation Mechanism**
Short-term (2 years)	Promote core values of USR, provide consulting services, resource matchmaking, and Advanced Seed Incubation Project. Host USR lectures and result exhibitions to enhance faculty and student understanding. Actively connect with community colleges and industry-academic sectors to foster cross-sector collaboration.		• Number of lectures and exhibitions • Number of collaborative projects
Mid-term (4 years)	Establish USR project teams and faculty awards linked to promotion and evaluation mechanisms. Encourage inter-university collaboration and experience sharing. Introduce SROI evaluations for regular review and strategy adjustment.		• Number of meetings held • Media exposure count • Project impact evaluation
Long-term (8 years)	Integrate USR teaching resources, support certified courses and AI-integrated instruction. Foster students' social concern and technical application skills. Promote collaboration with New Southbound countries and expand international cooperation to increase the effectiveness of USR implementation.		• Number of certified courses • Proportion of AI-based instruction • Status of New Southbound cooperation
Corresponding Standards	GRI	GRI 201: Economic Performance GRI 413 Local Communities	
	SDGs		
	STARS	• AC 1: Academic Courses • AC 2: Learning Outcomes • AC 7: Incentives for Developing Courses	• EN 3: Student Life • EN10: Community Partnerships • EN11: Inter-Campus Collaboration

6-1 All-Campus Engagement in USR

• Social Practice Promotion Framework

In August 2022, the university integrated the Institutional Research Center and the Office of Social Responsibility to establish the “Center for Institutional Research and Sustainable Development” (hereinafter referred to as the Sustainability Center). To implement University Social Responsibility (USR), the center aims to leverage its influence by integrating campus administrative resources and academic expertise across disciplines. It seeks to cultivate the humanistic concern and social literacy required for USR research, and to serve as a training hub for USR-related education. In response to the needs of local communities, the center transforms academic knowledge into a driving force for social innovation and sustainable development. Through active social engagement, it promotes a shift in teaching practices, realizing the vision of a borderless university. The center also acts as a platform linking the university with public and private sectors, industry, and urban-rural communities, fostering a virtuous cycle of USR-related research and practice, resource integration, and local sustainable development through collaboration and mutual growth. In alignment with this vision, the following strategic plans and key goals have been proposed:

Promote USR as a Campus-Wide Movement

To fulfill the university’s development goals of establishing a “diverse and innovative learning environment” and serving as a “cradle for holistic development,” student character is cultivated while fostering a learning and research environment that integrates both technological and humanistic perspectives. Based on local needs, professional and interdisciplinary courses are introduced to build a foundation for practical engagement in USR. To further expand awareness of USR and SDG-related issues among faculty and students, the Sustainability Center actively participates in departmental and faculty meetings to promote the USR vision and provide explanations regarding relevant administrative support mechanisms. Consulting services and resource matchmaking are also proactively offered. In addition, exhibitions focusing on USR and sustainability topics are organized to showcase faculty and student achievements in local engagement, thereby demonstrating the effectiveness of these initiatives.

Deepening Participation Mechanisms and Establishing a USR Educational Practice Base

To provide a sound institutional environment supporting faculty and student involvement in USR, the university has already established foundational systems for faculty incentives, curriculum development, and campus-wide participation. Furthermore, to enhance student engagement across disciplines, USR certification courses have been introduced. These courses integrate community-based issues into the curriculum to cultivate talent equipped with both technological skills and humanistic awareness, enabling them to address social challenges effectively. As USR practice programs continue to be implemented across academic units, the university also expands the scope of the USR micro-curriculum by integrating diverse social practice courses and fostering practical talent through interdisciplinary learning frameworks.

Launching University-Specific Action Plans to Foster Talent Development and Regional Revitalization

Through the development and support of USR practice teams, the university enhances professional capacity across departments, acting as a local think tank to drive issue-based research, regional revitalization, and sustainable operations. Continuous investment is made in program funding and institutional resources to nurture internal USR seed projects, with annual growth in the number of participating project teams. Based on existing field foundations and the professional demands of local social issues, the university adopts a spatial strategy of “synchronizing the old and new for sustainable co-prosperity” to establish practice sites, aiming to generate positive environmental impact and jointly promote urban and rural talent development and revitalization.

• Assessment of Social Practice Effectiveness

Rooted in technological advancement, the university demonstrates a commitment to humanistic values and local community engagement. By addressing social issues and developmental needs, local implementation of USR is advanced. Students apply professional and technical skills through field internships, working collaboratively with local communities to cultivate talent and facilitate regional revitalization. During the current period, emphasis was placed on “paradigm shifts” and “deepened operations,” while new topics were also introduced. A total of four projects under the Ministry of Education’s Phase III USR Program and eight internal USR seed projects were implemented.

• University Social Responsibility Practice Program

Project Title	Yingge Ceramics Empowerment and Technology-Driven Development Project
Project Coordinator	Department of Cultural Business Development / Professor Wang Yi-Hui Department of Materials and Resources Engineering / Professor and University President Hsi-Fu Wang (Co-Coordinator) Department of Materials and Resources Engineering / Professor Chiu De-Wei (Collaborators) Department of Industrial Design / Associate Professor Li Yi-Rui (Collaborators)

Yingge is a town infused with the spirit of ceramics. With a deep passion for pottery, the university has actively participated in local cultural development through its University Social Responsibility (USR) program. After two years of fieldwork and on-site investigations, efforts have ranged from exploring sources of clay to preserving and passing down ceramic craftsmanship. The team, with extensive experience across Asia, has leveraged academic expertise to examine how traditional ceramic regions can transform in the face of modern challenges. Beginning with an understanding and transformation of clay itself, the program empowers younger generations, revitalizes local culture, and documents the stories of master artisans to breathe new life into traditional ceramic art. This initiative encompasses six core focus areas: the preservation and continuation of local characteristics, foundational education in ceramic arts, enhancement of the industry through advanced materials and technologies, cultural translation through interactive practice, activation of local spaces, and the establishment of a dual-core network between Taiwan Tech and the Yingge Ceramics Museum. The 2024 phase emphasizes greater international cooperation in education, academic research, and exhibition exchange to bring Yingge's ceramic art and technology to the global stage.

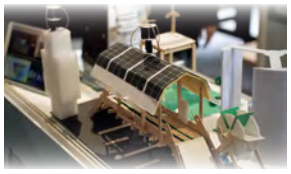
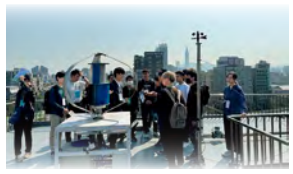
From tracing the origins of ceramic clay to using artisan techniques to engage younger generations, the project showcases both the diversity of ceramic art and the university's key role in local development. Through a combination of academic courses and hands-on practice, students gain a deep understanding of ceramic history, while exploring material properties and technological advancements that enable innovation in traditional crafts.



Project Title	City Pioneer Green Energy: A New Model for Urban Campus Sustainability
Project Coordinator	Assistant Professor Ruan Yu-Hsuan, Department of Mechanical Engineering

With climate change accelerating, the shift toward net-zero emissions and the development of green energy has become an irreversible global trend. However, in densely populated urban environments, citizens remain relatively unfamiliar with the practical applications of renewable energy, such as wind and solar power. Maximizing the use of green energy technologies in limited urban spaces while addressing local development needs presents a significant challenge. Located in downtown Taipei and surrounded by high-rise buildings, the university campus offers limited space for large-scale wind farms. However, this unique setting presents an excellent opportunity to explore small-scale, urban-friendly wind and hybrid energy systems.

The "City Pioneer Green Energy" project addresses this opportunity and social need by linking environmental conditions, industries, intercollegiate collaboration, and academic expertise. The project initially focuses on urban wind power as a breakthrough point, using domestically produced vertical axis wind turbines (VAWTs) installed on the rooftop of the Integrated Science and Technology Building. Performance optimization is conducted using measurement tools and computational fluid dynamics simulations. The team has identified additional campus sites with wind energy potential to expand green energy demonstration areas. Through USR-certified courses, collaboration between STEM and non-STEM students, international academic exchanges, and social engagement, the project aims to extend the impact of green energy technology to broader societal levels.


Project Title	Green Transformation: Circular Utilization and Innovative Design of Electronic Waste
Project Coordinator	Professor Cheng Meng-Chong, Department of Industrial Design

This project aims to promote the effective circular utilization of electronic waste. It is implemented in three stages – corporate site visits, participatory workshops, and stakeholder interviews – combining education with hands-on practice to enhance environmental awareness and professional competency. Led by Professor Cheng Meng-Chong of the Department of Industrial Design, the project team brings together expertise in public design, circular design, and visual communication. In collaboration with the Hua-Ke Cultural and Arts Foundation, the project ensures both professionalism and innovation throughout its implementation. The initiative integrates interdisciplinary coursework and employs site visits and hands-on workshops to strengthen pedagogical innovation and deepen students' understanding of electronic waste reuse and related technologies. Through a formal partnership agreement with the Hua-Ke industrial group, the project promotes industry–academia collaboration, organizes multiple visits and workshops, encourages community participation, and proposes innovative solutions to address environmental challenges in real-world settings. The project collaborates with local governments and international institutions to promote innovative utilization of electronic waste, expanding its international impact and sustainability.

The project team emphasizes not only technological advancement but also active engagement with local communities and industries. By facilitating interactions between faculty, students, and local enterprises, the project explores practical approaches to waste reuse and fosters knowledge exchange. Further, the team engages deeply with local neighborhoods by developing design proposals that respond to actual waste disposal issues, thereby enhancing community involvement in environmental matters. Beyond the application of technical knowledge, the project humanizes electronic waste – transforming it from a cold, discarded material into a meaningful conduit that connects the environment, community, and industry.



Project Title	Future Vision for Beitou Sustainable Market
Project Coordinator	Assistant Professor Chen Ying-Fen, Department of Architecture

This project is committed to the sustainable development of Beitou Market. In collaboration with the local Yunjii Cooperative, it aims to enhance sustainability awareness among vendors and consumers through food and agricultural education and practical engagement. The primary goals include achieving sustainable market operations, advancing the circular economy, and fostering the branding and modernization of the traditional marketplace. As the Beitou Market's original facilities, constructed in the 1980s, have deteriorated over time, the Taipei City Government initiated a renovation project in 2023, relocating vendors to a temporary market space. While the interim facility offers a cleaner and brighter environment, it continues to face issues such as inefficient spatial layout, competition from other markets, and an overreliance on single-use packaging. In response, this project not only aligns with the city's physical infrastructure improvements but also focuses on the "soft" aspects of development, promoting urban agriculture and food system innovation. It envisions the creation of a "Beitou Sustainable Market" that aligns with contemporary user needs and positions the market as a site for community-based learning.

The project is integrated with the Department of Architecture's "Urban Design and Internship" course, offering students the opportunity to confront real-world urban design challenges within the marketplace setting, thereby deepening the connection between academic theory and practical application. Additionally, the course incorporates strategies for community engagement and frameworks for urban cultural analysis. Through qualitative interviews, behavioral mapping, and literature reviews, students investigate the relationship between spatial design and cultural formation within the market environment. The inclusion of French exchange students further enriches the course by enabling cross-cultural comparisons of international market revitalization case studies. This broadens student perspectives and enhances their capacity for multicultural dialogue and analysis.



Project Title	The Sanliu Project – Caring for the Elderly, Safeguarding Health, and Conserving the Ocean
Project Coordinator	Assistant Professor Li Yu-Chi, Department of Industrial Engineering and Management

This project seeks to address social challenges in Xiaoliuqiu – including community structure, occupational safety, and marine conservation – through a diverse range of activities and interdisciplinary collaboration. It also aims to enhance students' practical competencies and sense of social responsibility. The project focuses on three main objectives: (1) In collaboration with the Liouciou Township Public Health Center and the Taipei Ai-Ai Institute, the project supports elderly outreach and organizes long-term care and health education seminars. Students apply assessment tools and 3D foot scanning technology to conduct health evaluations and preventive diagnoses for geriatric foot conditions, raising awareness of elder care; (2) The project addresses occupational safety among diving instructors, with a focus on the unique needs of female instructors. It aims to improve workplace conditions and reduce risks of musculoskeletal injuries; (3) In partnership with diving clubs and environmental organizations, the project hosts marine sustainability seminars and ocean cleanup events. These allow students to participate directly in conservation efforts while employing innovative thinking to design and improve service strategies that promote sustainable development.

At its core, the project uses diving as both a metaphor and a methodological approach – applying the principles of human factors engineering to local community action. Just as divers must adapt to underwater environments, observe marine ecosystems, and cooperate with team members, students are trained to enter communities, understand local needs, and develop innovative, collaborative solutions. Through interdisciplinary coursework, expert-led lectures, and on-site investigations, students explore underwater ecosystems, observe marine biodiversity, and reflect on the ecological impact of human activity. Field visits to Xiaoliuqiu's communities enable students to engage in dialogue with local residents and business owners, uncovering regional characteristics and identifying the pressures brought about by industrial development. Guided by the curriculum, students analyze these local issues with particular attention to gender-related differences. By applying the methodologies of human factors engineering, they formulate innovative and feasible action plans tailored to the real needs of the community.

6-2 Moral Education and Civic Literacy

NTUT actively promotes the cultivation of a sustainable campus culture and core values, with a strong emphasis on developing students' awareness of sustainable development and social responsibility. Through first-year orientation courses, student club activities, and character education programs, the university integrates the principles of sustainability and a spirit of service into campus life, encouraging both faculty and students to practice and transmit these values through their daily actions.

• University Introduction for First-Year Students

The primary aim of the freshman orientation program is to help new students transition smoothly into university life before the start of classes, enabling them to adapt quickly to the campus environment and acquire foundational knowledge of sustainability education. To serve approximately 1,600 first-year students, the university offers a campus-wide orientation course, including a two-day freshman orientation camp designed to provide a well-rounded introduction to university life. The core objectives of the orientation include helping students understand available campus resources, the development of individual departments, and departmental activities. Interaction with classmates, senior students, and various university units allows students to build friendships and expand their social networks, facilitating a smoother integration into both academic and social environments.

The camp also offers a range of learning modules to help students quickly adapt to academic routines. These modules introduce campus culture, effective study strategies, and academic expectations, thereby improving their learning efficiency and adaptability. NTUT's 24 departments each organize their own department-specific orientation events, giving students a more in-depth understanding of their respective academic fields. In addition, 30 student clubs host interactive experiences that help freshmen explore personal interests and engage in campus social life.

The orientation camp mobilized approximately 300 participants, including university staff, student association leaders, club members, and planning personnel, all contributing to the successful execution of the event. At the same time, the General Education Center arranged a variety of special topic sessions for incoming students. These covered subjects such as interpersonal communication, soft skills, gender equality, and fraud prevention – aiming to enhance students' social engagement and emotional intelligence alongside academic learning. The entire orientation program attracted a total of around 3,000 participants, providing first-year students with a rich and meaningful entry experience into university life.

• Introductory Course

The purpose of the University Foundations course is to support first-year students in adapting successfully to university life and to provide a comprehensive foundation for academic learning and personal growth. To accommodate approximately 1,600 incoming students, the university offers 33 sections of this campus-wide course. Its objectives include helping students understand the core concepts, goals, and values of higher education, developing effective study habits and attitudes, and strengthening their problem-solving abilities when facing academic and life challenges. The course is designed to foster self-awareness, self-regulation, and self-management, ultimately broadening students' global perspectives.

The curriculum framework is inspired by Harvard University's eight core educational objectives, which serve as the guiding principles of the course. These include enhancing communication and expression skills; cultivating critical thinking; fostering moral reasoning; strengthening civic responsibility; supporting adaptation to diverse lifestyles; building global competence; encouraging intellectual curiosity across disciplines; and improving employability. In addition, the course integrates professional competency assessments and engineering ethics, as well as custom modules focused on interpersonal relationships, communication skills, and gender dynamics. These components aim to help students develop respectful and effective communication within a multicultural environment.

Overall, this course supports students' personal development, expands their worldviews, and equips them to thrive academically, socially, and professionally throughout their university journey.

Year	Number of new students in the entry-level courses	Number of new employees participating in the training
2022	35	1615
2023	35	1672
2024	33	1560

• Sustainability Club

Taipei Tech hosts a vibrant student club culture, with 67 active student organizations operating on campus each year. These clubs span a variety of categories including athletics, academics, recreation, music, social activities, service, and student governance. Each year, a campus-wide Club Fair is held to recruit new members. During the event, clubs perform and showcase their energy and creativity to attract first-year students, ensuring the continuity and sustainable growth of club life. In addition, concerts and other cultural events are organized to enrich students' extracurricular experiences and encourage them to build strong campus connections and cultivate healthy lifestyle habits in their new environment.

Student clubs that focus on sustainability issues include the Tzu-Yo Club, the Mountaineering Club, the Zhong-Zhi Buddhist Society, the Tzu Chi Youth Club, the Mountain Kids International Volunteer Club, and the Student Association. The Tzu-Yo Club organizes blood donation drives by bringing mobile blood units onto campus, encouraging faculty and students to contribute, promoting compassion, and fostering a culture of lasting care and sustainability; the Zhong-Zhi Buddhist Society hosts the "Winter Care Campaign" each year, distributing meal boxes to marginalized populations at Taipei Main Station and expressing concern for the homeless. The initiative also seeks to rally other charitable organizations and individuals to join in the effort to support vulnerable communities and share warmth during the winter months. The Tzu Chi Youth Association conducts beach cleanup activities, while the Mountain Kids International Volunteer Club organizes mountain cleanup events. These clubs regularly engage in off-campus experiential learning opportunities, emphasizing the integration of theory with practical action to promote sustainable behavior in daily life.

The Mountaineering Club offers a series of activities such as "Freshman Overnight Hike to Songluo Lake," "Overnight Hike to Bilu Mountain," and the "Mountain and Wilderness Lecture Series." These activities allow students to experience Taiwan's rich and diverse forest trails while fostering teamwork and adaptability. The club follows a strict "Leave No Trace" principle – carrying out everything they carry in – to promote environmental sustainability and responsible outdoor practices.

The EMBA Ocean Life Club, under the College of Management, has recently collaborated with the Keelung City Government to promote ESG (Environmental, Social, and Governance) principles. By leveraging resources from various industries within the EMBA program, the club organized a marine ecological restoration event on July 6, 2024. The event involved the release of nearly 9,000 juvenile barred knifejaw fish into the waters around Keelung Islet, followed by a beach cleanup activity on the island. This initiative provided both students and business leaders with an impactful form of marine environmental education. In line with its commitment to sustainability, the College of Management has integrated ESG topics into its AACSB (Association to Advance Collegiate Schools of Business) Assurance of Learning (AOL) quality assurance cycle. Moving forward, the college plans to expand its sustainability management education through additional courses, forums, and competitions.

• Student club statistics

Year	Student clubs related to campus sustainability	Sustainability-related academic and practical activities(such as orientation events, club services, etc.)	Number of participants
2022	27	149	3,432
2023	28	155	5,750
2024	30	161	6,072

• Student club operations

The Student Association organized the "Social Leaders Workshop," designed to help department and club leaders develop leadership, communication, and organizational management skills through targeted course content. Group discussions also incorporated SDG-related topics, such as promoting student rights, strengthening communication channels with the university, and engaging in environmental actions to give back to society. These efforts aim to deepen the impact of student organizations, while ensuring the continuity and transmission of their core values.

• Promote moral education

NTUT regards moral education as a foundation for self-discipline, ethical conduct, service, personal cultivation, and acts of kindness. To advance this initiative, the university established the Moral Education Promotion Committee, which is responsible for coordinating all related efforts. This committee integrates resources to cultivate students with strong moral values and ethical reasoning abilities. Through general education courses, student club activities, and arts and cultural competitions, the university aims to foster in students a moral literacy characterized by an understanding of goodness, appreciation of virtue, and active engagement in doing good – thereby contributing to a life of well-being, care, and justice for individuals and communities. For example: the Moral Education Calligraphy Competition held on May 2, 2023 attracted 142 participants; the same competition held on May 7, 2024 attracted 128 participants.

Implement the concept of inclusive Indigenous education

In response to the amendments to the Education Act for Indigenous Peoples, Indigenous education has been expanded to include all teachers, students, and citizens. This initiative reintegrates Indigenous cultural values into mainstream education, aiming to cultivate cultural sensitivity among all faculty, staff, and students, and to foster a society grounded in multicultural inclusion. To implement this inclusive approach, Indigenous cultures and transitional justice issues have been incorporated into the general education curriculum to develop students' multicultural perspectives. In addition, contemporary Indigenous issues have been included as part of faculty development materials used in advisor training programs, with the goal of enhancing teachers' understanding of Indigenous education and improving their ability to support and engage with Indigenous students.

• Sustainable Campus Participation

The General Education Center has planned various courses and activities to help students understand the importance of sustainable development and social engagement, while encouraging them to actively participate in related initiatives and programs. Through these activities, students' understanding of sustainable development and social responsibility is deepened, motivating them to put these concepts into practice during their university life.

Design of courses and activities	The General Education Center utilizes both courses and extracurricular activities to guide students in recognizing the significance of sustainable development and civic engagement, and to encourage active participation in related actions and projects.	
Sustainability development issues	Activities such as environmental protection, energy conservation, and waste reduction campaigns are organized to help students grasp the core concepts of sustainability and foster environmentally responsible awareness and behaviors.	
Social Engagement Activities	Hold seminars and organize visits related to social responsibility to enhance students' awareness and sense of social responsibility.	
Green Campus Program	Promote environmental education and initiatives on energy conservation and carbon reduction, enabling faculty and students to practice environmental protection and energy-saving behaviors.	
Gender equality seminars	Two to three seminars on gender equality are held each semester, with approximately 200 participants. These seminars aim to help students better understand gender differences and foster mutual respect and inclusiveness.	

The library is the knowledge hub of the campus, actively promoting sustainable development through a variety of innovative initiatives such as film screenings, book exhibitions, e-book displays, and salon lectures. These activities aim to help faculty and students understand the core values of sustainable development and apply the SDGs using library resources. Events such as “SDGs Research Pioneer” and “AI and SDGs” e-book exhibitions with interactive quizzes integrated SDG goals like “Quality Education,” “Affordable and Clean Energy,” and “Industry, Innovation, and Infrastructure.” These activities helped deepen understanding of sustainability issues among the university community and provided insights into the latest research trends. Aligned with the SDG goal “Good Health and Well-being,” the library also organized themed book exhibitions such as “Building a New You,” “Prescriptions for Peace of Mind,” “Run, Freshman, Run!” and “Love Yourself.” These exhibits encouraged readers to focus on mental health, learn relaxation techniques, and engage in self-care and personal growth. Additionally, the library used visual media as a means of outreach, inviting faculty and students to recommend public performance-licensed films on SDG themes. Film screenings included titles such as “Love in the Multiverse” and “Sustainable Thinking in Science Fiction Films,” which promoted reflection on SDG topics including gender diversity, sustainable industry and infrastructure, and sustainable cities and communities. In 2024, the library hosted a total of 12 SDG-themed promotional activities, drawing 1,904 participants. Additionally, to promote the sustainable use of resources and reinforce the concept of legally using books and textbooks, the Library continues to hold biannual second-hand textbook sales. In 2024, a total of 562 books were consigned, and 184 second-hand textbooks were sold, effectively reducing the financial burden on students while extending the life of books through resource sharing.



In addition, to encourage students to engage in campus sustainability through moral education, the library’s bi-monthly publication North Tech Youth has actively incorporated SDG-related themes and invited students to contribute articles. For example, the “Reading Together for Character” column introduced a new topic on “Environmental Sustainability,” encouraging students to raise awareness of green living in their daily routines and to take proactive steps toward environmental action. The “Comic Corner” column has featured topics such as “Women’s Rights and Gender Equality” and “Protecting the Earth through Environmental Action.” From 2022 to 2024, the publication featured 33, 49, and 71 SDG-themed articles, respectively – demonstrating a year-over-year increase in sustainability-focused content. Beyond knowledge dissemination, the 2024 issues also featured student reflections on community engagement and hands-on local initiatives, encouraging a deeper understanding of global sustainability issues and the development of real-world problem-solving skills.

To promote awareness of sustainability issues among faculty, staff, and students, the Center for Institutional Research and Sustainable Development integrates the spirit of sustainable development into campus life, as well as into individual teaching, research, and work environments. In coordination with the USR (University Social Responsibility) project, the center emphasizes sustainability empowerment as a key initiative, aiming to build a campus environment where all members are conscious of sustainable development and actively engaged in related actions.

Nurture the seeds of sustainability on campus

A total of 6 sustainability empowerment courses were organized, using group discussions, case simulation exercises, and participation in sustainability advocacy initiatives to help students gain deeper understanding of sustainability issues. These activities aimed to cultivate students’ sensitivity to sustainability and strengthen their problem-solving abilities. A total of 340 participants took part in the program, and 22 students were trained as sustainability seed leaders.



Transdisciplinary Collaboration and Sustainability Practices

The “Sustainable Living Lab–Social Practice and Sustainability Innovation Competition” was held for the first time in 2024. The competition encouraged participants to examine sustainability issues related to the campus environment, society, and economy, and to propose innovative sustainable solutions through cross-disciplinary collaboration. A total of 28 teams submitted proposals, with 19 teams selected for the finals, and 7 teams ultimately awarded.

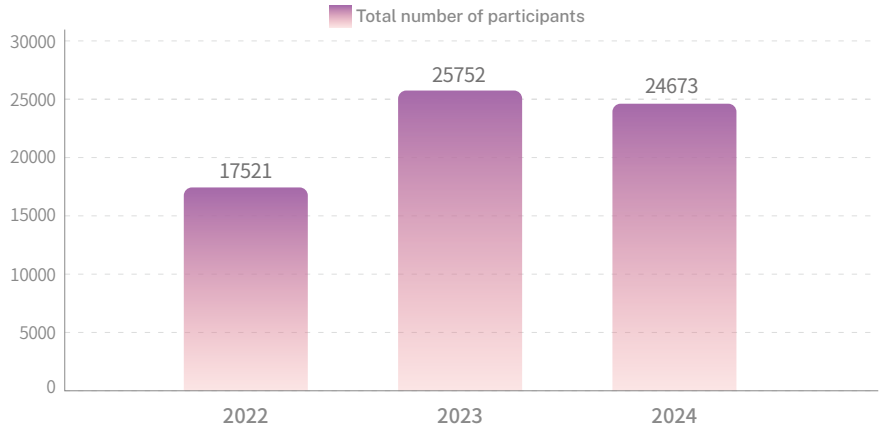
• Arts and Cultural Promotion

In response to the growing demand for aesthetic education in contemporary technological universities, Taipei Tech has continuously strengthened the mission and functions of its Arts and Culture Center. Guided by the Ministry of Education's initiative, "Aesthetics as Life: Rooted in Early Education, Cross-Disciplinary Innovation, and International Connectivity," the university has set key objectives focused on: Developing a diverse and innovative learning environment and serving as a nurturing ground for holistic education. Its strategic direction emphasizes the cultivation of students' appreciation for the humanities and arts, the development of strong character traits, and the deepening of moral and aesthetic education – all aligned with a people-centered teaching philosophy. Development goals are accompanied by a set of quantitative indicators and timelines. These begin with the establishment of a distinct identity for the Arts and Culture Center, followed by the promotion of aesthetic literacy initiatives, and ultimately, the cultivation of civic aesthetic awareness. Implementation areas include techno-humanistic aesthetics, interdisciplinary integration, international exchange, community engagement, citizen appreciation of aesthetics, and the advancement of SDG 4.7 (Education for Sustainable Development and Global Citizenship). Development indicators are selected based on available resources, program-specific conditions, and past implementation results in both infrastructure and programming. From these, core indicators are defined and revised on a rolling basis to adapt to the evolving needs of campus and community-based aesthetic education, ensuring meaningful engagement and impact for both university members and the wider public.

• Development Strategy and Practice of the Arts and Cultural Center

Main goals	Development strategies	Quantitative Indicators	Key Points of Practice	Main Features
Diverse and Innovative Learning Environment	Arts and Cultural Literacy	Establish the identity of the Arts and Cultural Center	Renovate and design the Arts and Cultural Center space to create a diverse and innovative aesthetic experience environment.	• Techno-Humanistic Aesthetics • Transdisciplinary Integration • International Exchange
		Promote aesthetic initiatives	Implement the key elements of the Campus Aesthetics Project.	
A Nurturing Ground for Holistic Development	Moral Education	Cultivate Civic Aesthetic Literacy	Fulfill university social responsibility and respond to society's needs for arts and cultural engagement	• Community Engagement • Aesthetic Literacy • Sustainable Culture
	Cultural Contribution			

• Number of participants in arts and cultural activities over the past three years



6-3 Expanding the Influence of Social Responsibility

• Service Learning and Remote Area Service Promotion

In addition to continuing regular service-learning programs, the university actively collaborates with service-oriented student clubs and vacation service teams. Every winter and summer break, these student-led teams voluntarily travel to rural schools across Taiwan to provide community service. Students embody the values and spirit of their respective organizations. Service clubs with similar missions often engage in collaboration and resource sharing, and sometimes co-organize camps, with the aim of offering more diverse resources and enriching experiences to children in underserved areas. Due to a shortage of teaching staff in many rural elementary schools, the presence of college student service teams during winter and summer breaks not only brings educational enrichment and new perspectives to the children, but also leaves them with meaningful and memorable experiences.

Looking ahead, these service teams will continue to cultivate deep roots in communities across Taiwan, passing on the spirit of service and nurturing the homeland with love. Through every journey, students learn, grow, and reach previously untouched regions. It is hoped that these service teams will serve as life-giving nourishment for the growth of young minds, becoming a quiet but powerful influence throughout their lives. Moreover, by instilling a passion for service into society, the program aims to spread joy and vitality, turning every planted seed into a catalyst for national and societal progress – fostering excellence and ensuring the enduring energy of love.

・Statistical Data of Winter and Summer Vacation Service Teams in the Past Three Years

Year \ Region	Statistics of Winter and Summer Vacation Service Teams								Service Learning Participation
	Northern Taiwan	Central Taiwan	Southern Taiwan	Eastern Taiwan	Offshore Islands	Online	Participating students	Number of Service Sessions	Number of Enrolled Students
2022	4	0	0	2	0	0	132	262	806
	5	0	0	0	0	0	34	34	868
2023	4	0	0	1	1	0	149	448	722
	6	1	0	0	0	0	128	251	850
2024	3	1	1	0	1	0	149	373	831
	4	1	0	0	0	0	95	158	754

• Labor Education

Taipei Tech has implemented a Labor Education Program that integrates community environmental maintenance, mutual cooperation, and the principles of labor education. The program encourages students to demonstrate civic responsibility by actively maintaining cleanliness and assisting in community activities – both on campus and in surrounding neighborhoods. From 2022 to 2024, the university organized 90 sessions of environmental cleanup and community service in areas around the campus and nearby communities. A total of 3,449 student participations were recorded. These activities helped students develop a sense of service, understand the importance of environmental hygiene, and foster positive interaction between the university and the local community. Ultimately, the program supports the shared vision of sustainable and harmonious development between the university and its surrounding communities.



• School of Continuing Education

In order to support the professional development of employees in Taiwan's industrial and commercial sectors, the university upholds the spirit of honesty and diligence, focusing on the research of practical science and technology. It aims to cultivate professionals who meet industry needs and possess both academic expertise and moral integrity, while also providing lifelong learning and continuing education opportunities for the public. The goal is to evolve into a practical, research-oriented university with strong vocational characteristics. Currently, the university offers the following academic programs: the Evening Division of the Four-Year Technical Program, the Industry–Academia Training Program, the Industry–Academia Collaboration Program, on-the-job master's programs at the graduate level, domestic and international EMBA programs under the College of Management, and a dual master's degree program in collaboration with the University of Texas at Arlington.

・Statistics of Courses Promoted in the Last Three Years

Semester	Category	Number of Classes	Number of students
2022-1	Non-credit courses	47	761
	Credit courses	21	129
2022-2	Non-credit courses	85	1285
	Credit courses	40	590
2023-1	Non-credit courses	63	1033
	Credit courses	24	454
2023-1	Non-credit courses	41	548
	Credit courses	40	570
2024-1	Non-credit courses	48	764
	Credit courses	20	322

• Continuing Education Center

NTUT's Division of Continuing Education has established a Continuing Education Center with the goal of enhancing academic growth and professional skills. Structured around the concept of career education, the center designs learning programs aligned with the needs of society, industry, and commerce. Its aim is to guide NTUT's continuing education efforts toward greater diversification, specialization, and enterprise alignment. The center integrates internal university resources to plan and offer a variety of continuing education programs. These include credit-bearing master's and bachelor's courses, as well as non-credit courses in areas such as civil service exam preparation, language learning, accounting and finance, information technology, arts and cultural enrichment, and health and wellness. In recent years, the center has also undertaken government-commissioned training programs, including the "Youth Employment Training Program for Emerging Industry Talents." As a result, it has become a high-quality lifelong learning environment in the Greater Taipei area, supporting adult learners in their pursuit of academic and professional advancement within a career-focused educational framework.

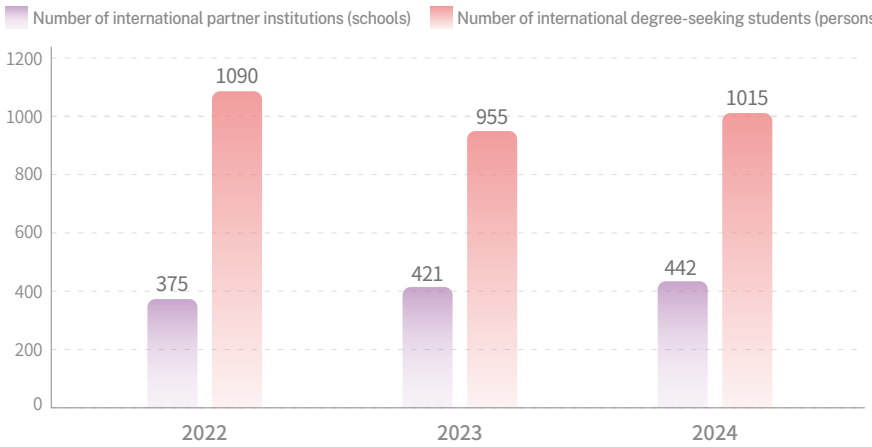
6-4 International Exchange and Cooperation

• Management Approach

<table>
<tr><th colspan="4">Partnerships & international exchange</th></tr>
<tr><td>Policies/ Commitments</td><td colspan="3">With “expanding international cooperation, deepening faculty and student exchanges, and enhancing global visibility” as the core objective, NTUT actively participates in major international conferences and forums and organizes academic seminars to expand its global network of partner institutions. The university has signed cross-border inter-university cooperation agreements and established international exchange platforms to facilitate various exchange activities, enhance the international mobility of faculty and students, and promote substantive and impactful global collaboration.</td></tr>
<tr><td>Responsible Unit</td><td colspan="3">Office of International Affairs</td></tr>
<tr><td></td><td colspan="2">Goals and Actions</td><td>Evaluation Mechanism</td></tr>
<tr><td>Short-term (2 years)</td><td colspan="2">1. In alignment with the government’s New Southbound Policy, focus on recruiting graduates from top universities in Southeast and South Asia.
2. Leverage media platforms for promotion and align with NTUT’s bilingual education initiatives to encourage student participation in related programs.
3. Continue to implement the “horizontal and vertical linkage” strategy by reviewing existing international partnerships and deepening collaborations with institutions that share mutual goals.</td><td>• Number of inbound and outbound exchange participants
• Number of international students
• Number of international partner institutions</td></tr>
<tr><td>Mid-term (4 years)</td><td colspan="2">1. Recruit outstanding international master’s students for direct admission into NTUT’s doctoral programs and encourage them to remain as postdoctoral researchers, thereby enhancing the university’s research capacity.
2. Promote the “International PBL (Project-Based Learning)” initiative across departments, fostering PBL projects with unique college-specific characteristics.
3. Establish long-term, substantive, and in-depth collaboration with benchmark partner institutions in research, teaching, and faculty-student exchange.
4. Regularly host academic exchange visits and joint activities.</td><td>• Ph.D. retention rate of international students
• Number of international PBL program participants
• Number of academic exchange events held</td></tr>
<tr><td>Long-term (8 years)</td><td colspan="2">Promotion of “Global Engagement – Full-Scale Participation”</td><td>• Number of inbound and outbound exchange participants
• Number of international students
• Number of international partner institutions</td></tr>
<tr><td rowspan="3">Corresponding Standards</td><td>GRI</td><td colspan="2">Formulate indicators</td></tr>
<tr><td>SDGs</td><td colspan="2"> 
</td></tr>
<tr><td>STARS</td><td>• AC 1: Academic Courses
• AC 2: Learning Outcomes
• AC 9: Research and Scholarship</td><td>• EN-11 Inter-Campus Collaboration
• EN-14 Participation in Public Policy</td></tr>
</table>

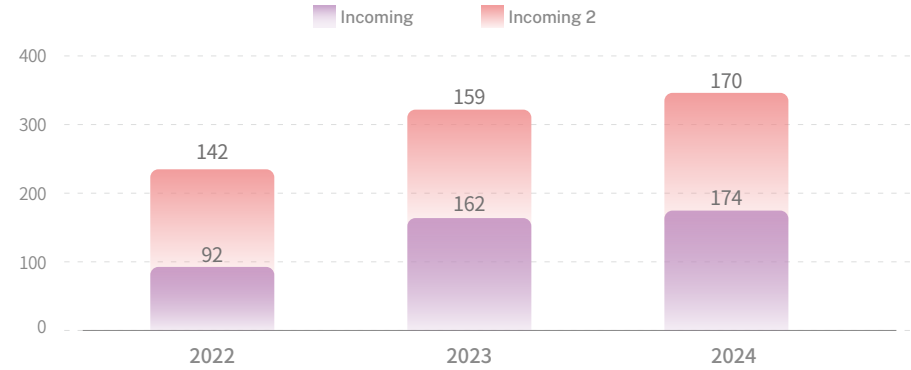
Talent cultivation is a core mission of higher education. In response to Strategy 3, “Enhancing Bilingual Proficiency and Global Perspectives,” of the National Development Council’s “Key Talent Cultivation and Recruitment Program,” NTUT actively seeks opportunities for international collaboration to jointly promote diverse international mobility programs. These programs provide platforms and channels for students to use English, apply professional knowledge, and gain international experience through semester exchanges, short-term courses, overseas internships, language training, laboratory visits, cross-border team competitions, dual degree programs, buddy systems, and joint research. The aim is to strengthen cross-border communication skills, foster an international mindset, and enhance students’ global mobility and competitiveness.

- Data on international exchanges in the past three years



- Number of international exchange students in the past three years

Higher Education SPROUT Project



NTUT focuses on building substantive partnerships with benchmark international universities and has signed agreements with institutions across five continents. From 2022 to 2024, the number of partner institutions increased by 61, reaching a total of 442 partner universities in 2024. Key strategies for internationalization include deepening cooperation with key partners, expanding regional partnerships, optimizing collaboration with new partners, and establishing new agreements. The university promotes a campus culture of “deep-rooted academic international exchange” by encouraging each college to develop a unique internationalization strategy and fostering greater participation in international exchange among faculty and students.

• International and Overseas Scholarships and Support

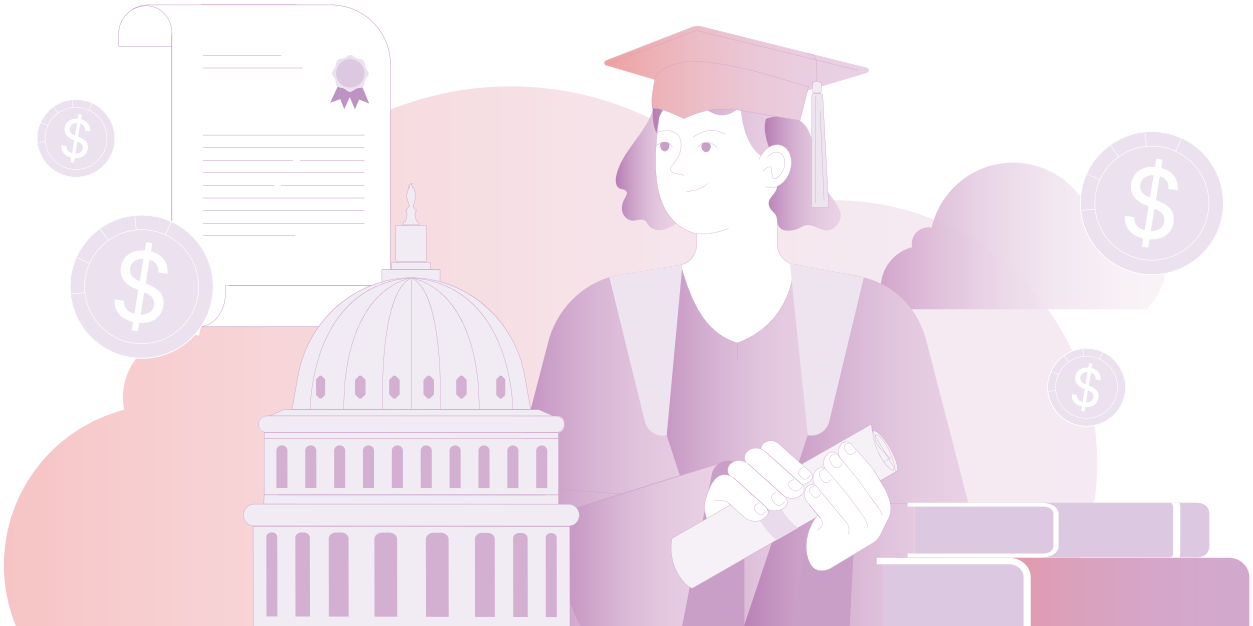
NTUT actively assists students in securing external funding and supplements it with internal subsidies and the "Overseas Study Scholarship," supporting study abroad through a diverse system of grants and awards. The percentage of students receiving such support has steadily increased in recent years. In addition to the Overseas Study Scholarship, NTUT has established an annual NT$3 million "Study Abroad Scholarship," which provides funding for current students and alumni (within three years of graduation) pursuing further studies overseas. Applicants may also apply to participate in NTUT's dual degree programs in countries including the U.S., Japan, the Netherlands, France, and Australia. From 2022 to 2024, a total of 23 students received this scholarship, with individual awards of up to NT$500,000.

In line with government policies on recruiting international students and attracting outstanding global talent to study in NTUT's degree programs at all levels, NTUT offers and facilitates a range of university-funded and government-sponsored scholarships. These include the "Chinese Language Scholarship" and the "Outstanding International Graduate Student Scholarship" for international students; the "NTUT Overseas Chinese Student Scholarship" and the same Outstanding International Graduate Student Scholarship for overseas Chinese students; and the "Mainland China Outstanding Student Scholarship" for students from mainland China. Additionally, NTUT assists international students in applying for the "Taiwan Scholarship," and supports government-funded programs such as the "New Southbound Elite Scholarship Program" and the "Africa Elite Scholarship Program" to attract outstanding lecturers from Southeast Asia and Africa. The university also guides overseas Chinese students in applying for various government scholarships, including the Ministry of Education's "Financial Aid for Disadvantaged Overseas Chinese Students," the "Graduate Scholarship for Outstanding Overseas Chinese Students," and the Overseas Community Affairs Council's "Outstanding and Academically Excellent Overseas Chinese Student Scholarship."

In order to assist international students in adapting to and integrating into campus life, NTUT established the "International Student Support Committee" in 2022. This committee promotes a multi-level campus support network across the university, its colleges, and departments. Upon enrollment, university-level units host a "New Student Orientation," colleges organize "Welcome Gatherings," and departments hold "Care Dinners" to help establish strong relationships between advisors and international students. The university also promotes "Study Group Communities" to connect students from similar backgrounds and encourage peer companionship in both academics and daily life, fostering a supportive and friendly environment for international students. In addition, a variety of support activities are offered to international degree-seeking students, including welcome and farewell events, regular check-in meetings, safety awareness seminars, career counseling for overseas Chinese and international students, and stress-relief workshops hosted by the Academic Counseling Center. NTUT also hosts the Taipei Tech International Student Association (TTISA), a nonprofit student organization that shares essential living information for international students in Taiwan and provides a platform for social and cultural exchange, further supporting their integration into campus life and the local community.

- Number of Students Receiving Support from the MOE Study Abroad Programs in the Past Three Years

Year	MOE Overseas Exchange Student Financial Assistance Grant	MOE Study Abroad Grant for Financially Disadvantaged Students
2022	65	2
2023	54	1
2024	44	0



· Number of Students in NTUT International Degree Programs 2022–2024

College	Department	Bachelor's Degree	Master's Degree	Doctoral Degree
College of Mechanical and Electrical Engineering	International Master Program in Mechanical and Automation Engineering	-	13	-
	International Master Program in Energy Refrigerating, Air-Conditioning & Vehicle Engineering	-	3	-
	International Graduate Program in CMEE	-	-	8
College of Electrical Engineering and Computer Science	International Graduate Program in Electrical Engineering and Computer Science (EECS)	-	36	20
College of Engineering	International Graduate Program in Energy and Optoelectronic Materials (EOMP)	-	-	34
College of Management	International Master of Business Administration Program (IMBA)	-	84	-
College of Design	International Program for Interaction Design and Innovation	31	38	-

• International Exchange Promotion

From 2022 to 2024, NTUT hosted an average of 40 international guest visits and exchange activities annually. Over the three-year period, the university signed 123 Memoranda of Understanding (MOUs) with institutions from 39 countries. NTUT also engaged in substantial academic exchanges and collaborations with key partner universities – including Penn State University, New Jersey Institute of Technology, the University of Cincinnati, and Tohoku University in Japan – through dual degree programs, joint research, and academic seminars. Among various exchange activities, several key initiatives focused on global sustainable development and green technology, including:

1. NTUT, as a member of the "National United University System," participated in the 4th Taiwan-Japan Joint Symposium between the National United University System and Japan's SixERS, with key themes on "Global Sustainable Development and Green Technology" and "Future Trends in Healthcare and Biotechnology."

2. As a member of the "TAItech x HAWtech Alliance," NTUT hosted a "Sustainability Exchange Workshop," which included in-depth exploration of the MIT City Science Lab and offshore wind power engineering research.

• Progress on Bilateral International Academic Collaboration Projects

Between 2022 and 2024, NTUT actively participated in programs funded by the National Science and Technology Council to promote sustainable development and innovative research through bilateral international academic collaborations. During this period, NTUT faculty proposed a total of 10 bilateral research projects, covering five major areas: energy and sustainable development, design and user behavior, materials and optoelectronics, environmental engineering, and green chemistry and safety education.

Project name	A new construction safety education platform based on immersive site scenario-generated data engaging individuals' safety behaviours
Collaborating unit	London South Bank University
Project Coordinator	Assistant Professor Nai-Wen Chi, Department of Civil Engineering

The construction industry faces significant operational risks, with workplace accidents often resulting in serious injuries or fatalities. These risks primarily stem from unsafe working environments and unsafe operational behaviors. Traditionally, occupational safety has relied on on-site inspections and the analysis of past accident cases to develop safety regulations, which workers are then required to follow. However, with advancements in information technology, automated monitoring using artificial intelligence (AI) has become feasible. Yet, training AI models requires a large volume of data, and capturing visual data of hazardous scenarios on actual construction sites poses considerable risks.

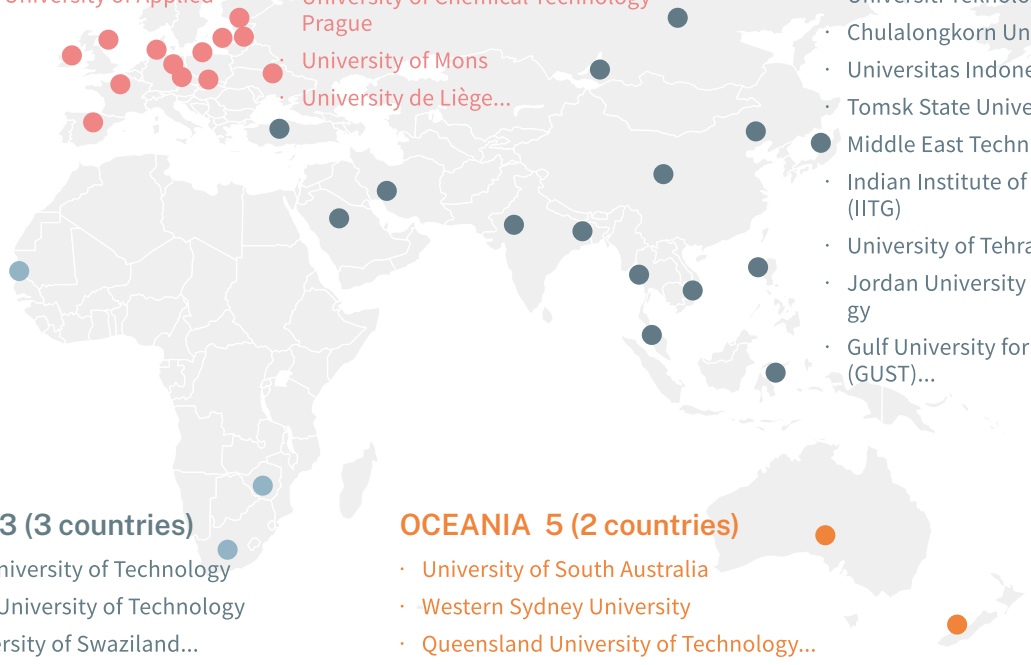
This project proposes a method that integrates Building Information Modeling (BIM) and Virtual Reality (VR) technologies, allowing trained personnel to simulate dangerous construction site scenarios and behaviors in a virtual environment. This approach enables the safe acquisition of training data for developing AI applications that can automatically identify hazardous situations. It also serves as high-quality material for safety education. By employing this technology, construction site safety can be significantly enhanced, work-related injury risks can be reduced, and a more comprehensive safety management system can be established for the construction industry.

Project name	Smart functional self-assembling for organic electonics and photonics
Collaborating unit	Institute of Physics of the Czech Academy of Sciences
Project Coordinator	Associate Professor Hsiu-Hui Chen, Department of Molecular Science and Engineering

The main objective of this project is to promote collaboration between the Czech Republic and Taiwan, covering three major directions. First, the Czech team will design and characterize novel photoactive self-assembling materials exhibiting liquid crystal behavior. These materials may serve as (i) smart dopants to enhance the energy conversion efficiency of photovoltaic cells, or (ii) components for photonic devices. The Taiwanese team will focus on developing complex, disc-shaped functional materials with columnar mesophases capable of forming well-defined supramolecular structures. Beyond the potential applications of these two structurally distinct types of self-assembling materials, the project also aims to deepen the understanding of the relationship between molecular architecture and mesophase properties. This will be achieved through effective and interdisciplinary knowledge exchange, fostering long-term collaboration. The high complementarity between the two national teams in their respective fields of expertise makes this a truly interdisciplinary project. Its outcomes are expected to have a significant impact on the chemistry and physics of self-assembling materials, advancing the fields of soft matter chemistry, physics, and photonics.

• International Partner Institutions

442 Partner Universities from 57 Countries



EUROPE 134 (24 countries)

- Chalmers University of Technology
- TU Wien
- University of Southern Denmark
- Université Grenoble-Alpes
- Czech Technical University in Prague
- Warsaw University of Technology
- Karlsruhe University of Applied Sciences
- Vilnius University
- Vilnius Gediminas Technical University
- Tallinn University of Technology
- Riga Technical University
- Budapest University of Technology and Economics
- University of West Bohemia
- University of Chemical Technology Prague
- University of Mons
- University de Liège...

ASIA 247 (21 countries)

- Korea Advanced Institute of Science & Technology (KAIST)
- Sungkyunkwan University (SKKU)
- Osaka University
- Kyushu University
- Waseda University
- Universiti Malaya (UM)
- Universiti Teknologi Malaysia (UTM)
- Chulalongkorn University (CU)
- Universitas Indonesia (UI)
- Tomsk State University (TSU)
- Middle East Technical University
- Indian Institute of Technology Guwahati (IITG)
- University of Tehran
- Jordan University of Science & Technology
- Gulf University for Science & Technology (GUST)...

AMERICA 53 (7 countries)

- Penn State University
- Université du Québec
- Auburn University
- New Jersey Institute of Technology
- University of Cincinnati
- The University of Texas at Arlington
- Wright State University
- Long Island University
- The Ohio State University
- Universidad Autónoma de Chile
- National University of Technology (UTN) Argentina...

AFRICA 3 (3 countries)

- Durban University of Technology
- Tshwane University of Technology
- The University of Swaziland...

OCEANIA 5 (2 countries)

- University of South Australia
- Western Sydney University
- Queensland University of Technology...

Appendix

Appendix

STARS (The Sustainability Tracking, Assessment & Rating System)

STARS Indicator	Corresponding chapter of the report	Page number
INTRODUCTION		
PRE-1 : Executive Letter	Message from the President and future outlook	5
INSTITUTIONAL CHARACTERISTICS		
PRE-3: Institutional Boundary	1-1 About NTUT	12-15
PRE-4: Operational Characteristics	1-1 About NTUT	12-15
PRE-5: Academics and Demographics	1-1 About NTUT	12-15
PLANNING & ADMINISTRATION		
COORDINATION & PLANNING		
PA-1: Sustainability Coordination	1-2 Sustainable Development Blueprint and Management	16-20
PA-2: Sustainability Planning	1-2 Sustainable Development Blueprint and Management	16-20
PA-3: Inclusive and Participatory Governance	1-2 Sustainable Development Blueprint and Management	16-20
	1-3 Stakeholder Engagement	21-22
	1-4 Materiality Analysis	23-26
DIVERSITY & AFFORDABILITY		
PA-5: Diversity and Equity Coordination	2-1 School Governance	35-36
PA-6: Assessing Diversity and Equity	3-1 Human Rights Protection and Equality	52-63
PA-7: Support for Underrepresented Groups	3-1 Human Rights Protection and Equality	52-63
PA-8: Affordability and Access	3-1 Human Rights Protection and Equality	52-63
INVESTMENT & FINANCE		
PA-9: Committee on Investor Responsibility	2-3 Financial Performance and Management	40-44
PA-10: Sustainable Investment	2-3 Financial Performance and Management	40-44
PA-11: Investment Disclosure	2-3 Financial Performance and Management	40-44
WELLBEING & WORK		
PA-12: Employee Compensation	3-2 talent cultivation and retention	64-72
PA-13: Assessing Employee Satisfaction	3-2 talent cultivation and retention	64-72
PA-14: Wellness Program	3-3 Campus Safety and Health	73-79
PA-15: Workplace Health and Safety	3-3 Campus Safety and Health	73-79

STARS Indicator	Corresponding chapter of the report	Page number
ACADEMICS		
CURRICULUM		
AC-1: Academic Courses	4-2 Sustainability Education	92-101
AC-2: Learning Outcomes	4-2 Sustainability Education	92-101
AC-3: Undergraduate Programs	4-2 Sustainability Education	92-101
AC-4: Graduate Programs	4-2 Sustainability Education	92-101
AC-5: Immersive Experience	4-2 Sustainability Education	92-101
AC-7: Incentives for Developing Courses	4-2 Sustainability Education	92-101
AC-8: Campus as a Living Laboratory	4-2 Sustainability Education	92-101
	6-2 Moral Education and Civic Literacy	123-127
RESEARCH		
AC-9: Research and Scholarship	4-1 Sustainability Research	81-91
AC-10: Support for Sustainability Research	4-1 Sustainability Research	81-91
AC-11: Open Access to Research	2-6 Academic and Integrity Ethics	50

STARS Indicator	Corresponding chapter of the report	Page number
ENGAGEMENT		
CAMPUS ENGAGEMENT		
EN-2 : Student Orientation	6-1 USR for All	119-122
7EN-3: Student Life	6-1 USR for All	119-122
	6-2 Moral Education and Civic Literacy	123-127
EN-4: Outreach Materials and Publications	6-1 USR for All	119-122
	6-2 Moral Education and Civic Literacy	123-127
EN-5: Outreach Campaign	6-1 USR for All	119-122
	6-2 Moral Education and Civic Literacy	123-127
EN-6: Assessing Sustainability Culture	4 Excellence in Education Development	80-106
EN-7: Employee Educators Program	3-2 talent cultivation and retention	64-72
EN-8: Employee Orientation	3-2 talent cultivation and retention	64-72
EN-9: Staff Professional Development and Training	3-2 talent cultivation and retention	64-72

STARS Indicator	Corresponding chapter of the report	Page number
PUBLIC ENGAGEMENT		
EN-10: Community Partnerships	6-1 USR for All	119-122
	6-2 Moral Education and Civic Literacy	123-127
EN-11: Inter-Campus Collaboration	6-4 International Exchange and Cooperation	130-135
EN-12: Continuing Education	6-2 Moral Education and Civic Literacy	123-127
	6-3 Expanding the Influence of Social Responsibility	128-129
EN-13: Community Service	6-1 USR for All	119-122
	6-2 Moral Education and Civic Literacy	123-127
EN-14: Participation in Public Policy	1-2 Sustainability Blueprint and Management	16-20
EN-15: Trademark Licensing	Not applicable	
OPERATIONS		
AIR & CLIMATE		
OP-1: Emissions Inventory and Disclosure	1-5 Achieving Net-Zero Sustainability	27-33
	5-2 Energy Management	110-113
OP-2: Greenhouse Gas Emissions	1-5 Achieving Net-Zero Sustainability	27-33
	5-2 Energy Management	110-113

STARS Indicator	Corresponding chapter of the report	Page number
BUILDINGS		
OP-3: Building Design and Construction	5-2 Energy Management	110-113
OP-4: Building Operations and Maintenance	5-2 Energy Management	110-113
ENERGY		
OP-5: Building Energy Efficiency	5-2 Energy Management	110-113
OP-6: Clean and Renewable Energy	5-2 Energy Management	110-113
FOOD & DINING		
OP-7: Food and Beverage Purchasing	2-4 Supply Chain Management and Green Procurement	45-46
OP-8: Sustainable Dining	2-4 Supply Chain Management and Green Procurement	45-46
GROUNDS		
OP-9: Landscape Management	5-1 Green Landscaping	108-109
OP-10: Biodiversity	5-1 Green Landscaping	108-109
PURCHASING		
OP-11: Sustainable Procurement	2-4 Supply Chain Management and Green Procurement	45-46
OP-12: Electronics Purchasing	2-4 Supply Chain Management and Green Procurement	45-46

STARS Indicator	Corresponding chapter of the report	Page number
OP-13: Cleaning and Janitorial Purchasing	2-4 Supply Chain Management and Green Procurement	45-46
OP-14: Office Paper Purchasing	2-4 Supply Chain Management and Green Procurement	45-46
OP-15: Campus Fleet	5-2 Energy Management	110-113
OP-16: Commute Modal Split	5-2 Energy Management	110-113
OP-17: Support for Sustainable Transportation	5-2 Energy Management	110-113
WASTE		
OP-18: Waste Minimization and Diversion Waste Diversion	5-3 Waste management	114-115
OP-19: Construction and Demolition	5-3 Waste management	114-115
OP-20: Hazardous Waste Management	5-3 Waste management	114-115
WATER		
OP-21: Water Use	5-4 Water Resource Management	116
OP-22: Rainwater Management	5-4 Water Resource Management	116

• GRI Standards Index

NTUT has reported the information cited in the GRI content index for the period from January 1 to December 31, 2024 with reference to the GRI Standards.

- GRI 1: Basic 2021 (GRI 1 does not include any disclosure)
- GRI 2: General Disclosures 2021

GRI Standards		Item No.	Disclosure Item	Corresponding chapter	Page number	Remark
GRI 2 (2021)	General Disclosures	Organization and reporting practices of the organization				
		2-1	Organizational details	1-1 About NTUT	12-15	
		2-2	Entities included in the organization's sustainability reporting	About the Report	4	
		2-3	Reporting period, frequency and contact point	About the Report	4	
		2-4	Restatements of information	-	-	No restatements of information
		2-5	External assurance	About the Report	4	
		Activities and workers				
		2-6	Activities, value chain and other business relationships	1-1 About NTUT	12-15	
		2-7	Employees	1-1 About NTUT	12-15	
		2-8	Workers who are not employees	1-1 About NTUT	12-15	

GRI Standards		Item No.	Disclosure Item	Corresponding chapter	Page number	Remark
GRI 2 (2021)	General Disclosures	**Governance**				
		2-9	Governance structure and composition	2-1 School Governance	35-36	
		2-10	Nomination and selection of the highest governance body	2-1 School Governance	35-36	
		2-11	Chair of the highest governance body	2-1 School Governance	35-36	
		2-12	Role of the highest governance body in overseeing the impact management	2-1 School Governance	35-36	
		2-13	Delegation of responsibility for managing impacts	2-1 School Governance	35-36	
		2-14	Role of the highest governance body in sustainability reporting	2-1 School Governance	35-36	
		2-15	Conflicts of Interest	-	-	No Board of Directors
		2-16	Communication of critical concerns	1-3 Stakeholder Engagement	21-22	
		2-17	Collective knowledge of the highest governance body	2-1 School Governance	35-36	
		2-18	Evaluation of the performance of the highest governance body	1-3 Stakeholder Engagement	21-22	
		2-19	Remuneration policies	3-1 Human Rights Protection and Equality	52-63	
		2-20	Process to determine remuneration	3-1 Human Rights Protection and Equality	52-63	
		2-21	Annual total compensation ratio	3-1 Human Rights Protection and Equality	52-63	
		Strategy, policies and practices				
		2-22	Statement of Sustainable Development Strategy	1-2 Sustainable Development Blueprint and Management	16-20	
		2-23	Policy commitments	1-2 Sustainable Development Blueprint and Management	16-20	
		2-24	Embedding policy commitments	1-5 Net Zero Sustainability	27-33	
		2-25	Processes to remediate negative impacts	1-5 Net Zero Sustainability	27-33	
		2-26	Mechanisms for seeking advice and raising	1-3 Stakeholder Engagement	21-22	
		2-27	Compliance with laws and regulations	-	-	No major violations and fines
		2-28	Membership of associations	-	-	
		Stakeholder Engagement				
		2-29	Approach to stakeholder engagement	1-3 Stakeholder Engagement	21-22	
		2-30	Collective bargaining agreements	-	-	

GRI 3 Material Topics

GRI 3 (2021)	Material Topic	3-1	Process for determining material topics	1-4 Materiality Analysis	
		3-2	List of Material Topics	1-4 Materiality Analysis	
		3-3	Management of material topics	1-4 Materiality Analysis	

Topic-specific disclosure

IFRS					
GRI 201 (2016)	Economic Performance	201-2	Financial impacts and other risks and opportunities caused by climate change	1-5 Achieving Net-Zero Sustainability	27-33
		201-4	Financial assistance received from the government	2-3 Financial Performance and Management	40-44
GRI 202 (2016)	Market position	202-1	Ratio of standard salary of junior employees of different genders to local minimum wage	3-1 Human Rights Protection and Equality	52-63
GRI 203 (2016)	Indirect economic impact	203-1	Infrastructure investments and services supported	4-3 Sustainable Technology 6-1 USR for All	102-106 119-122
GRI 204 (2016)	Procurement Practices	204-1	Proportion of spending on local suppliers	2-4 Supply Chain Management and Green Procurement	45-46
GRI 205 (2016)	Anti-corruption	205-2	Communication and training about anti-corruption policies and procedures	2-6 Academic and Integrity Ethics	50
		205-3	Confirmed incidents of corruption and actions taken	2-6 Academic and Integrity Ethics	50

Environmental Standards					
GRI 302 (2016)	Energy	302-1	Energy consumption within the organization	5-2 Energy Management	110-113
		302-3	Energy intensity	5-2 Energy Management	110-113
		302-4	Reduce energy consumption	5-2 Energy Management	110-113
GRI 303 (2016)	Water and effluents	303-3	Water withdrawal	5-4 Water Resource Managemen	116
GRI 305 (2016)	Emissions	305-1	Direct (Scope 1) GHG emissions	5-2 Energy Management	110-113
		305-2	Energy indirect (Scope 2) GHG emissions	5-2 Energy Management	110-113
		305-3	Other indirect (Scope 3) GHG emissions	5-2 Energy Management	110-113
GRI 306 (2020)	Waste	306-3	Waste Generation	5-3 Waste management	114-115
		306-4	Waste diverted from disposal	5-3 Waste management	114-115
		306-5	Waste directed to disposal	5-3 Waste management	114-115
GRI 308 (2016)	Supplier Environmental Assessment	308-1	New suppliers that were screened using environmental criteria	2-4 Supply Chain Management and Green Procurement	45-46

Social Code of Conduct					
GRI 401 (2016)	Employment and labor relations	401-1	New employee hires and employee turnover	3-2 Talent cultivation and retention	64-72
		401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	3-1 Human Rights Protection and Equality	52-63
				3-2 Talent cultivation and retention	64-72
		401-3	Parental leave	3-2 Talent cultivation and retention	64-72
GRI 403 (2016)	Occupational Safety and Health	403-1	Occupational Safety and Health Management System	3-3 Campus Safety and Health	73-79
		403-3	Occupational health services	3-3 Campus Safety and Health	73-79
		403-4	Worker participation, consultation, and communication on occupational safety and health	3-3 Campus Safety and Health	73-79
		403-5	Worker training on occupational safety and health	3-3 Campus Safety and Health	73-79
		403-6	Promotion of worker health	3-3 Campus Safety and Health	73-79
GRI 404 (2016)	Training and Education	404-1	Average hours of training per year per employee	3-2 Talent cultivation and retention	64-72
		404-2	Programs for upgrading employee functions and transition assistance programs	3-2 Talent cultivation and retention	64-72
		404-3	Percentage of employees receiving regular performance and career development reviews	3-2 Talent cultivation and retention	64-72
GRI 405 (2016)	Diversity and Equal Opportunity	405-1	Diversity of governance body and employees	3-1 Human Rights Protection and Equality	52-63
		405-2	Ratio of basic salary and remuneration of women to men	3-1 Human Rights Protection and Equality	52-63

Social Code of Conduct					
GRI 406 (2016)	Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	3-1 Human Rights Protection and Equality	52-63
GRI 413 (2016)	Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	4-3 Sustainable Technology	102-106
				6-1 USR for All	119-122
				6-2 Social Responsibility Impact	123-127
		413-2	Operations with significant actual and potential negative impacts on local communities	6-1 USR for All	119-122
				6-2 Social Responsibility Impact	123-127
GRI 418 (2016)	Customer Privacy	418-1	substantiated complaints concerning breaches of customer privacy and losses of customer data	2-5 Information Security and Personal Data Protection	47-49

Customized topic disclosure

Customized topics	Disclosure Item	Corresponding chapter	Page number	Remark
Student internship and employment	-	3-2 talent cultivation and retention	64-72	
Teaching quality & effectiveness	-	4-2 Sustainability Education	92-101	
Research and industry-academia collaboration	-	4-1 Sustainability Research	81-91	
		4-3 Sustainable Technology	102-106	
University Social Responsibility practice		6-1 USR for All	119-122	
Partnerships & international exchange	-	6-4 International Exchange and Cooperation	130-135	

• SASB Standards Index

Disclosures topic	Indicator code	Nature of the transaction	Disclosure Indicators	Corresponding chapter/report description
Information security	SV-ED-230a.1	Qualitative	Describe the methods used to identify and resolve data security risks	2-5 Information Security and Personal Data Protection(P.47-49)
	SV-ED-230a.2	Qualitative	Describe the policies and practices related to the collection, use, and retention of student information	2-5 Information Security and Personal Data Protection(P.47-49)
	SV-ED-230a.3	Quantitative	(1) Number of data breaches (2) Percentage of personal identifiable information (PII) (3) Number of students affected	(1) 0 information security protection or threat attack (2) 0% of personal identifiable information (3) 0 students were affected by data leakage
Quality education and remunerated employment	SV-ED-260a.1	Quantitative	Graduation Rate	77.09%[Note 1]
	SV-ED-260a.2	Quantitative	Rate of graduates expected to be completed	67.05%[Note 2]
	SV-ED-260a.3	Quantitative	Employment rate	97.31%[Note 3]
	SV-ED-260a.4	Quantitative	(1) Annual bond yield (2) debt to free income ratio	Not applicable
	SV-ED-260a.5	Quantitative	Plan group default rate	Not applicable

Disclosures topic	Indicator code	Nature of the transaction	Disclosure Indicators	Corresponding chapter/report description
Marketing and recruitment practices	SV-ED-270a.1	Qualitative	Ensure that the key performance statistics are disclosed to future students before collecting any fees and explain the results of the discussion.	Not applicable
	SV-ED-270a.2	Quantitative	Total monetary losses as a result of legal proceedings associated with advertising, marketing, and compulsory disclosure	None
	SV-ED-270a.3	Quantitative	(1) Teaching and student service expenses (2) Marketing and recruitment expenses	2-3 Financial performance and management(P.40-44)
	SV-ED-270a.4	Quantitative	Source of revenue: (1) Title IV Funds (2) GI Bill Funds (3) Student loan	Not applicable
Activity Indicator	SV-ED-000.A	Quantitative	Number of students actually registered	13,493 people
	SV-ED-000.B	Quantitative	Number of students eligible for registration	21,844 people
	SV-ED-000.C	Quantitative	Average daily study scores of students in the juni or college	Freshman: 22 credits Junior Year: 21 credits Sophomore: 23 credits Senior Year: 13 credits
	SV-ED-000.D	Quantitative	Number of people (1) Number of teachers (2) Number of employees	(1) 861 people (including full-time and part-time teachers) (2) 751751 people

Note 1: Number of graduates / Number of enrolled students (*including students in extended study). This includes students officially registered and enrolled in the second semester of Academic Year 112 (2023–2024) in the following categories: fifth-year junior college students (including those in extended study), two-year technical program students (including extended study), fourth-year undergraduate students (including extended study), second-year and above master's students, and fourth-year and above doctoral students.

Note 2: Number of graduates due to be completed/Number of students due to be enrolled in the class (including 107 students in five colleges and universities, 108 students in colleges and universities, 110 students in master's programs, and 108 students in the Poongamia Program, and excluding those who are not registered and have waived their studies).

Note 3: The ratio of students who have obtained a degree certificate and can work for one year after graduation.

TCFD Index Table

	Category	Corresponding Chapter	Page Number
Climate Change Risks	Physical Risks	1-5 Net Zero Sustainability	27-33
	Transformation Risks	1-5 Net Zero Sustainability	27-33
Climate Change Opportunities	Opportunities	1-5 Net Zero Sustainability	27-33

Aspect	TCFD Disclosure Items	Corresponding chapter	Page Number
Governance	Supervision of climate-related risks and opportunities by the Board of Directors	1-5 Achieving Net-Zero Sustainability	27-33
	Role of management in assessing and managing climate-related risks and opportunities	1-5 Achieving Net-Zero Sustainability	27-33
Strategy	Short-, medium-and long-term climate-related risks and opportunities identified by the organization	1-5 Achieving Net-Zero Sustainability	27-33
	Describe the impact of climate-related risks and opportunities on the organization's business, strategy, and financial planning	1-5 Achieving Net-Zero Sustainability	27-33
	The resilience of the organization's strategy and the consideration of different climate-related scenarios	1-5 Achieving Net-Zero Sustainability	27-33
Risk management	Process for identifying and assessing climate-related risks by the organization	1-5 Achieving Net-Zero Sustainability	27-33
	Climate-related risk management process of the organization	1-5 Achieving Net-Zero Sustainability	27-33
	Integrating the identification, assessment, and management processes of climate-related risks into the organization's overall risk management system	1-5 Achieving Net-Zero Sustainability	27-33
Indicators and targets	The indicators used by the organization to assess climate-related risks and opportunities in accordance with its strategy and risk management process	1-5 Achieving Net-Zero Sustainability	27-33
	Scope 1, Scope 2, and Scope 3 (if applicable) greenhouse gas emissions and related risks	1-5 Achieving Net-Zero Sustainability 5-2 Energy Management	27-33 110-113
	Targets used by the organization to manage climate-related risks and opportunities, and the performance of such targets	1-5 Achieving Net-Zero Sustainability	27-33

The Ten Principles of the UN Global Compact

Principle of classification	Content of the original principles	Corresponding chapter	Page number
Human Rights	Support and respect for internationally recognized human rights	3-1 Human Rights and Equality	52-63
	Ensure not to be complicit in human rights abuses	2-4 Supply Chain Management and Green Procurement	45-46
Labor Standards	Support freedom of association and the effective recognition of the right to collective bargaining	3-1 Human Rights and Equality	52-63
	Prohibition of all forms of forced and compulsory labor	3-1 Human Rights and Equality	52-63
	Prohibition of child labor	3-1 Human Rights and Equality	52-63
	Eliminate discrimination in employment and occupation	3-1 Human Rights and Equality	52-63
Environmental	Support a precautionary approach to environmental challenges	2-4 Supply Chain Management and Green Procurement	45-46
	Adopt proactive actions to promote more responsible practices in the environment	2-4 Supply Chain Management and Green Procurement 5-2 Energy Management	45-46 110-113
	Encouragement to develop and promote eco-friendly technologies	1-5 Achieving Net-Zero Sustainability	27-33
Anti-corruption	Work against all forms of corruption, including extortion and bribery.	2-6 Academic and Integrity Ethics	50

- Third-party assurance statement

Independent Assurance Statement

National Taipei University of Technology 2024 Sustainability Report

AFNOR GROUP was established in 1926. We are the National Standardization Body of France, a permanent council member in ISO and one of the leading certification bodies in the world. This assurance work was carried out by AFNOR ASIA LTD., a subsidiary of AFNOR GROUP. All the members of the verification team have professional backgrounds and have accepted AA1000 AS, AFAQ 26000, ISO 9001, ISO 14001, ISO 14064, ISO 45001, ISO 50001, and other sustainability-related international standard trainings. All assigned verifiers have been approved as the lead auditors or verifiers. AFNOR ASIA LTD. (hereinafter referred to as AFNOR ASIA) and National Taipei University of Technology (hereinafter referred to as Taipei Tech) are independent entities. Except for the contents described in this independent assurance statement, AFNOR ASIA LTD. is not involved in the preparation process of the sustainability report of Taipei Tech.

RESPONSIBILITIES

Taipei Tech is responsible for reporting its economic, environmental, and social operating activities and performance of its operating locations in sustainability report (hereinafter referred to as "the Report") in accordance with the declared sustainability reporting standards.

AFNOR ASIA is responsible for providing an independent assurance statement to Taipei Tech and its stakeholders in accordance with the described scope and method. This statement is for Taipei Tech use only and is not responsible for any other purpose.

SCOPE AND CRITERIA

The assurance scope of the agreement between Taipei Tech and AFNOR ASIA includes:

1. The scope of assurance operation is consistent with the scope disclosed in the "National Taipei University of Technology 2024 Sustainability Report".
2. AFNOR ASIA performs assurance operation according to the Type 1 assurance of the AA1000 assurance standard (v3), reviewing and evaluating Taipei Tech's compliance with the AA1000 AccountAbility Principles (2018).
3. The assurance operation includes reviewing and evaluating Taipei Tech's relevant processes, systems and controls and available performance information, as well as compliance with the following reporting criteria:
   - GRI Standards.

METHODOLOGY

- The Report is reported in reference with the GRI Standards, and the content of the Report is reviewed for compliance with the GRI Guidelines for general disclosure and specific topic disclosure.
- The verification team interviewed relevant personnel to confirm the communication and response mechanism for stakeholders and the decision-making process for material topics, but did not directly contact external stakeholders.
- All documents, data and information related to the preparation of the Report were verified by the verification team through interviews with relevant personnel.
- The process of reviewing organizational outputs, collecting and managing qualitative and quantitative data disclosed in reports based on a sampling plan.
- By interviewing the responsible personnel of each group, examining and reviewing the relevant documents, materials and information, the verification team evaluated the reasonableness of the sources of supporting materials and evidence for the contents of the Report.

CONCLUSION

◆ **AA1000 Accountability Principles**

Inclusivity

Taipei Tech has developed a core strategy to actively promote cross-domain integration and academic innovation. Through the construction of a diverse and inclusive campus environment, the adherence to sound financial discipline, a lean and efficient administrative team, and the deepening of international academic and research exchanges and healthy and intelligent green campus planning, it fully corresponds to the main axis of school development and demonstrates a solid foundation for university governance and global competitiveness.

Materiality

Taipei Tech has integrated GRI Standards, SASB guidelines and SDGs, and corresponds to STARS, QS World University Rankings and THE Impact Rankings, to construct a Double materiality and specific topics reporting framework. Through three dimensions, it identifies issues of concern to stakeholders, prioritizes them and discloses them transparently, demonstrating the university's ability to align sustainable governance with global indicators.

Responsiveness

Taipei Tech has actively responded to the challenges of climate change and sustainable

development, and implemented the ESG concept through green campus construction and policy practice. The diversified enrollment strategy effectively covers different ethnic groups and needs, and strengthens educational equity. In terms of sustainable research, it fully corresponds to the UN SDGs indicators. In 2024, teachers will continue to excel in publishing SDGs-related papers in international journals, demonstrating academic influence and global responsibility practices.

Impact

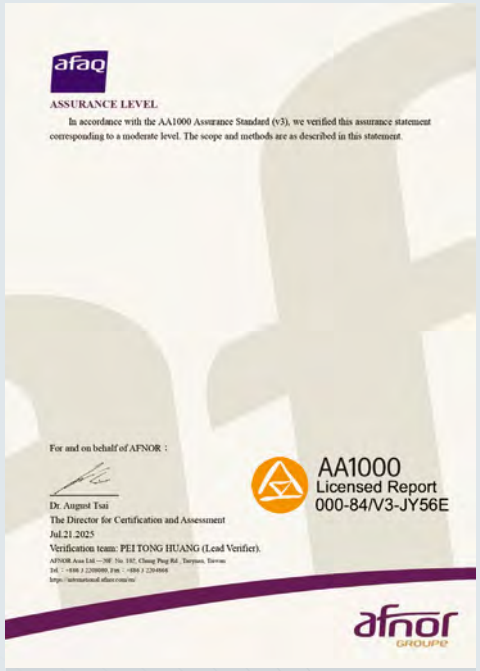
Facing the dual impacts of declining birthrates and climate change, Taipei Tech has actively identified opportunities for transformation, focusing on introducing specially weighted SDGs paper award subsidies in sustainable research and teaching, encouraging faculty and students to focus on global issues, at the same time, it goes beyond the policy perspective and plans to achieve a net zero emission target by 2048, building a risk resilience mechanism and implementing a sustainable commitment for the co-prosperity of present and future generations.

◆ **Global Reporting Initiative Sustainability Reporting Standards**

Under the strategic goal of Global Engagement-Full Scale, the content of the Report has been fully referenced to the GRI Sustainability Reporting Standards, and the disclosure of strategic governance, stakeholder participation and identification of material topics have been implemented to ensure information transparency and reliable verification. In response to the STARS-related standards set by the American AASHE, a consistent sustainable indicator correspondence mechanism will be gradually established for the entire school from teaching research, operational practices to social participation. Through the dual-track progress of sustainable achievements and reporting standards, not only will the international reputation be consolidated, but a solid foundation will be laid for the higher education model of sustainability and global connection.

ASSURANCE OPINION

AFNOR ASIA has developed a complete sustainability reporting assurance standard based on the verification guidelines of the AA1000 Assurance Standard (v3) and the GRI Standards. Based on the sufficient evidence provided by Taipei Tech and the facts seen during on-site verification, we adhere to the principle of fairness and issue a statement on the global sustainability reporting standards followed by the organization. In our opinion, the information and data presented in the Report by Taipei Tech provides a fair and balanced representation. We believe the focuses on economic, social, and environmental indicators in Taipei Tech in 2024 are well represented.



ASSURANCE LEVEL

In accordance with the AA1000 Assurance Standard (v3), we verified this assurance statement corresponding to a moderate level. The scope and methods are as described in this statement.

For and on behalf of AFNOR：

Dr. August Tsai
The Director for Certification and Assessment
Jul.21 ,2025
Verification team: PEI TONG HUANG (Lead Verifier).

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