NATIONAL
YANG MING CHIAO TUNG
UNIVERSITY

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2024

NATIONAL YANG MING CHIAO TUNG UNIVERSITY

SUSTAINABLE DEVELOPMENT GOALS

Sustainable Development Annual Report

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Letter from President

In light of the global consensus to achieve net-zero emissions by 2050 and the United Nations' advocacy for the 2030 Sustainable Development Goals, international cooperation, national policies, and industrial innovation have gradually deepened. Consequently, the demand for "green-collar talent" will significantly increase, prompting higher education institutions to actively cultivate "high-quality talents who will lead the world towards a sustainable future."

To comprehensively implement the spirit of sustainable development and gradually achieve our set net-zero emission goals, our university has made groundbreaking progress in governance, teaching, and research in recent years. Sustainable development has become the backbone of our university's governance and decision-making processes, with our administrative team and faculty members promoting their respective professional activities. In terms of teaching, in addition to continuously increasing the number of courses on sustainability issues, we have also implemented various life education initiatives on sustainability, carbon reduction, and plastic reduction on campus.

To encourage faculty involvement in sustainable research action plans, we provide substantial resources as support, aiming for our university to leverage its technology, healthcare, and humanities expertise to lead global sustainable solutions through scientific research. Additionally, we have established industry-academia research centers in collaboration with enterprises, focusing on specific projects such as humanities and social research in science parks, improving the health of remote, elderly, and disadvantaged communities, and planning disaster prevention and net-zero technologies. We aspire to foster cross-domain innovation, lead the future of engineering, and enable our students to apply their knowledge to connect with sustainable assets after graduation. Our university's unique interdisciplinary advantage nurtures future leaders eager to tackle complex modern issues related to "human welfare, environment, and industry" with a spirit of sustainability, leading to significant impacts on the world.

Our university has also excelled in evaluations or competitions related to international and domestic sustainability issues. In recent years, we have recommended several sustainable teaching and research action plans to participate in the "Asia-Pacific and Taiwan Sustainable Action Awards" organized by the Taiwan Institute for Sustainable Energy (TAISE), achieving an impressive record of 4 gold, 2 silver, and 4 bronze awards. Furthermore, in the 2024 THE Impact Rankings, we ranked among the top 50 globally. Looking ahead, we believe that with the collective implementation of the spirit of sustainability by all faculty, students, and alumni, National Yang Ming Chiao Tung University will continue surpassing itself and progress toward achieving the highest standards of "sustainable development."

The President Chi-Hung Lin
National Yang Ming Chiao Tung University

About NYCU

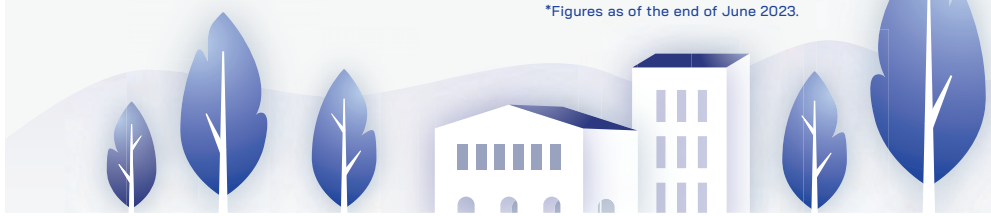
Profile

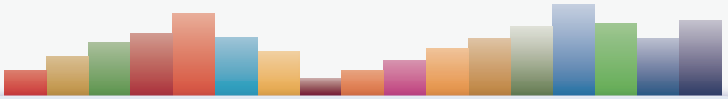
National Yang Ming Chiao Tung University

Colleges and Organizations	19 Colleges + 1 Affiliated Hospital
Campuses	8 Campuses, located in 5 cities
Floor Area of School Building	858,831 square meters

21,428 Number of Students	1,139 Number of Full-time Faculty Members	46 International Faculty Members
1,300 International Students	1,095 Number of Full-time Staffs	350+ Number of Sister Universities
10 National-level Research Centers	38 University-level Research Centers	37 College-level Research Centers

*Figures as of the end of June 2023.





SDGs Impacts

THE Impact Rankings 2024 **50 th**

SDG 2 48 th	SDG 3 27 th	SDG 9 38 th
SDG 11 94 th	SDG 16 29 th	SUSTAINABLE DEVELOPMENT GOALS

* Data from THE Impact Rankings 2024

01

NO POVERTY

2019-2023 Publications	70
2019-2023 Percentage of all Taiwan Publications	9.8%
Course Units	180
Student Engagements with Units on SDG 1	4,519

Research

Protecting the Rights of Persons with Disabilities

Persons with disabilities often face significant financial challenges due to the high medical costs they may incur, putting them at an economic disadvantage. Professor Christy Pu from the university's Institute of Public Health conducted a study investigating the sources of income for persons with disabilities and how these sources impact their overall income. The study found that work income constitutes the largest portion of their income, but the effect on total income varies depending on the income source. Additionally, the study observed significant differences in income sources across different age groups. The research suggests that disability policies should be designed to ensure the long-term sustainability of income sources for persons with disabilities. These findings have been published in the international journal *Plos One*.

Association Between Socioeconomic Status and Cancer Risk

Cancer is the second leading cause of death worldwide and in the United States. A research team led by Associate Professor Jason Liu from the university's Institute of Public Health analyzed data from the U.S. National Health Interview Survey to study participation in breast, cervical, and colorectal cancer screenings. The results showed that individuals with lower educational levels, no health insurance, or living in poverty had a higher prevalence of never having been screened for these cancers. Additionally, the usage rate of colorectal cancer screening procedures was particularly low. These research findings have been published in the international journal *Cancer Causes & Control*.

01 NO POVERTY

Social Impact

International Volunteer Team Serving the Underprivileged in India

The university's "India International Volunteer Team Jullay" has collaborated with Jamyang School in India for 14 years. In addition to planning themed courses, the team continues to raise educational funds for the school's children and promote sponsorship programs to help impoverished students complete their education. They have also launched a library project to help the school build a reading space. The 2024 service plan includes more diverse themed courses, such as local news, digital education, recycled art, and menstrual equity. The team also helped the school acquire 23 refurbished computers donated by ASUS, 8 second-hand cameras, 7 sets of the Coding Ocean board game, and 419 English books to enhance the school's digital equipment for teachers and expand reading resources for students.

In-Depth Community Visits to the Elderly

Under the "Health and Happiness in Yilan City" project by the university-affiliated Yang Ming Chiao Tung University Hospital, Professor Pesus Chou from the Master's Program in Public Health established the "Crusaders Yilan Team," which has been operating for 12 years. In 2023, with the theme "In-Depth Community, Exploring the Future," the team continued its outreach services in rural areas, providing care and promoting the vision of healthy aging in Daxin, Shennong, and Minquan neighborhoods in Yilan City during a six-day service event. Historically, the team has mostly consisted of students from the medical school. However, in 2023, it welcomed new members from the College of Electrical Engineering, College of Management, and College of Humanities, Arts, and Social Sciences, introducing innovative ideas and experiences through interdisciplinary collaboration.

01 NO POVERTY

Education & Cultivation

Admission Channels for Disadvantaged Students

To help more disadvantaged students improve their circumstances through higher education, the university's undergraduate individual application program established the "Tunmeng Track." This track provides a special admission screening mechanism for disadvantaged students, including lowering the entrance exam score requirements, simplifying the screening process, reducing application fees, and offering transportation and accommodation subsidies during the exam period. These measures aim to increase admission opportunities for disadvantaged students, narrow the educational resource gap caused by wealth and urban-rural divides and differences, and create new opportunities for talent cultivation in higher education.

Courses for Caring for the Disadvantaged

The university's Service Learning Center offers a course titled "Healthy Meals and Caring for the Disadvantaged." This course teaches students about ingredients, equipment, and the practical skills needed to prepare healthy meals through hands-on snack-making exercises. The meals prepared by the students are sold for charity, with the proceeds donated to social welfare organizations to support disadvantaged groups. The course aims to raise awareness of the needs of marginalized populations and provide tangible help, fostering positive social change and promoting kindness and compassion in society .

Stewardship

Short-Term Overseas Scholarship Program for Economically Disadvantaged Students

To ensure that economically disadvantaged students have the opportunity and sufficient resources to participate in short-term overseas exchange programs, the university has implemented the "Short-Term Overseas Scholarship Program for Economically Disadvantaged Students." This program provides financial assistance for economically disadvantaged students to participate in semester exchanges, dual-degree programs, short-term courses at partner universities, and overseas internships. Eligible students include those from low- and middle-income households, individuals with disabilities, children from families facing special circumstances, and indigenous students. In 2024, the university sponsored 12 economically disadvantaged students for overseas exchanges, including 8 for semester exchanges and 4 for short-term courses at partner universities, with subsidies totaling NT$700,000. The students' exchange destinations included South Korea, France, the Czech Republic, Belgium, and Singapore. This program reduces the impact of inequality and poverty, enhances the university's international reputation, and expands global partnerships.

Emergency Financial Assistance

The university has established the "Emergency Financial Assistance Program" in collaboration with campus and social resources to assist students facing financial difficulties due to illness, family emergencies, or unexpected crises. This program provides appropriate financial support through a dedicated account governed by the "NYCU Student Emergency Assistance Regulations." The financial aid ranges from NT$5,000 to NT$30,000, depending on the severity of the situation, to alleviate students' financial burdens caused by illness or unforeseen events, helping them continue their studies without disruption.

02

ZERO HUNGER

2019-2023 Publications	85
2019-2023 Percentage of all Taiwan Publications	5.4%
Course Units	55
Student Engagements with Units on SDG 2	685

Research

Bilateral Academic Cooperation in Agricultural Technology

Our university has initiated an academic cooperation project in partnership with the Taiwan Agricultural Research Institute under the Ministry of Agriculture. This collaboration aims to strengthen research and development capabilities, address gaps, and cultivate talent in agricultural technology through cross-disciplinary efforts. The focus areas include applying cutting-edge technologies such as ICT, optoelectronics, smart machinery, nanotechnology, biotechnology, and food science to modern agriculture. Key research topics include plant phenomics, plant-based product development, and reducing pesticide usage to ensure sustainable agricultural practices.

Agricultural and Food Research Trend

Professor Charles Trappey from our university's Department of Management Science led a research team that analyzed food-related research trends in North Asia-Pacific using bibliometric analysis. Key areas of focus include food supply, food security, crops, agriculture, and fertilizers. Taiwanese and Korean scholars have been particularly interested in the health impacts of food consumption behaviors, such as the links between food and sleep disorders, depression, and suicide. Taiwan and Japan are also advancing agricultural chemical and bio-agricultural solutions. Understanding these trends helps guide future research in ending hunger and advancing agricultural science.

Social Impact

Promoting Sustainable and Healthy Diets in the Community

Associate Professor Hsin-Jen Chen from our university's Institute of Public Health leads the project "Healthy Earth Diet to Your Doorstep: Pioneering Local Food Environment Revitalization." The initiative promotes sustainable diets by emphasizing local ingredients, plant-based proteins, and reducing sugar to lower carbon emissions while benefiting personal and environmental health. The project team developed innovative dietary teaching tools and held workshops in community colleges to improve public adherence to sustainable, healthy eating practices. Future efforts aim to optimize these tools for broader impact.

Supporting the Food Industry's Growth

Our university's Institute of Food Safety and Health Risk Assessment has partnered with Creation Foods Co., LTD to establish the "Scholarship of IFSHRA" (NT$50,000 annually). This scholarship encourages students to advance in the food industry and supports those with financial constraints to attend international conferences, fostering talent growth and industry development.

Education & Cultivation

Food Safety and Life Course

To enhance students' awareness of food safety and their ability to analyze risks, such as risk assessment, communication, and management, the University System of Taiwan (UST) has developed a cross-university "Food Safety and Life" course. This collaborative course integrates expertise from four universities, using remote video teaching for maximum efficiency. The course covers food production, processing, distribution, consumption, related hazards, health, technology, management, and legal regulations.

Fostering Multicultural Perspectives through Food

Food serves as more than sustenance; it can be a bridge between different cultures. Our university, with over 1,600 international students from 82 countries, aims to promote interaction between local and international students. In 2023, the EMI Bilingual Education Office organized three international food culture-sharing events featuring cuisines from Indonesia, France, and Thailand. The Indigenous Student Resource Center also hosted a traditional Rukai cooking class, "Ina’ s Tribal Kitchen," to enhance cultural understanding through hands-on culinary experiences, fostering a deeper appreciation for diversity.

Stewardship

Establishing Sustainable Food Management Standards

Our university has developed sustainable food management standards to create a low-carbon dining environment and reduce food waste. Key measures include:

- Guide campus food vendors in registering on the campus food platform, ensuring transparency.
- Promote local ingredients by inviting agricultural vendors to set up stalls.
- Encourage the use of local produce to reduce food miles and carbon footprint.
- Require vendors to record food waste for better stock planning.
- Advocate for optimal ingredient use and customized meal orders to minimize waste.

03

GOOD HEALTH AND WELL-BEING

2019-2023 Publications	6,999
2019-2023 Percentage of all Taiwan Publications	16.4%
Course Units	1,782
Student Engagements with Units on SDG 3	32,622

Research

Chip Technology to Improve Depression Symptoms

Brain stimulation is seen as a new hope for treating depression. In collaboration with the global medical device company Abbott, a research team led by Professor You-Yin Chen from the university's Department of Biomedical Engineering has made significant findings. Their research demonstrates that using graphene neural probe chip technology to stimulate the nucleus accumbens within the dopamine circuit of the brain not only enhances motivation and reduces depressive behaviors in animal models but also shows strengthened dopamine circuit functional connectivity in brain MRI scans. The study confirms that stimulation of the nucleus accumbens promotes the production of neurotrophic factors in the brain, improving mitochondrial function in neural cells affected by depression. It provides more scientific evidence and technological support for clinical treatment. The results of this study have been published in the international journal *Neurobiology of Stress*.

Developing AI Medical Devices for Brain Tumors

The university's Medical Device Innovation and Translation Center has developed an AI-assisted brain tumor detection system, 'DeepBT Detector' , which has received approval from the Ministry of Health and Welfare. This AI system assists in interpreting MRIs for three major brain cancers: vestibular schwannomas, meningiomas, and brain metastases. It is Taiwan's first AI medical device capable of automatically detecting and annotating multiple types of brain tumors. Additionally, the center has developed a 3D-printed mandibular plate technology that has passed the Quality Management System (QMS) certification from the Taiwan Food and Drug Administration. The university has become the first institution to simultaneously hold QMS certification and licenses for Class I and II medical devices.

03 GOOD HEALTH AND WELL-BEING

Social Impact

Guardians of Elderly Health

The university's USR project, "Guarding the Elderly Action Plan," has partnered with San-Zhi Health Center and its attached physical therapy center to create a series of fitness classes tailored to seniors. The courses include exercises using resistance bands, rope ladders, and interactive activities with medicine balls, making exercise more enjoyable and increasing the willingness of seniors to participate. After 11 sessions, clear improvements were observed in the physical abilities of all participants, demonstrating the positive effects of appropriate therapy and exercise on seniors' health. This collaboration between the university and local health units not only enhances the physical and cognitive functions of the elderly but also promotes successful aging in place and community well-being.

Oral Health Medical Service Team

To raise awareness of self-oral care and establish oral health concepts in the community, the university's School of Dentistry, in collaboration with the Wenshan Health Center in Taipei, promotes oral health exercises and hygiene education for seniors. In addition to professional lectures, the team conducts numerous oral health education sessions in areas such as Shilin, Beitou, Neihu, and Zhongshan districts in Taipei, as well as in Yilan, Hsinchu, Taichung, Changhua, Kaohsiung, and Pingtung. These sessions target school children, seniors, the general public, and care facility workers, emphasizing the importance of oral health. From 2018 to 2023, 114 educational sessions were held, benefiting nearly 10,000 people. Between 2022 and 2023, approximately 50 sessions were conducted, reaching around 2,500 participants.

Community Health Education in Cambodia

The university's "Southeast Asia International Volunteer Team BAT" is committed to improving the health and well-being of local community residents. In 2024, in collaboration with a local support center in Cambodia, the team will conduct "health and hygiene" education classes and interactive workshops in three sub-urban communities of Phnom Penh supported by the center. The health education activities will focus on three main themes: physical, mental, and women's health. The goal is to equip the Cambodian community with better health knowledge and encourage them to lead healthier lives while fostering resilience. This effort aims to reduce the health disparities between different social classes in Cambodia and help bridge the gap between Cambodia and developed countries.

Education & Cultivation

Establishing a Modern Chinese Medicine Program to Train Innovative Practitioners

In 2023, the university established the Department of Chinese Medicine to promote traditional Chinese medical knowledge while integrating modern smart healthcare to cultivate research talent in Chinese medicine. The program aims to heal diseases, enhance public health, and restore vitality and the value of life. To internationalize Chinese medicine education in Taiwan, President Lin Qi-Hong and the Department of Chinese Medicine faculty have actively visited universities in Hong Kong and South Korea. They engaged in deep discussions on medical education, clinical research, and healthcare services, establishing academic bridges across countries. Besides Taiwan and China, Hong Kong and South Korea have a long history of offering Chinese medicine programs in Asia. Notably, Busan University's Korean Medicine School shares a similar founding philosophy with the university's Chinese Medicine Department, making it a key partner in these international collaborations.

Interdisciplinary Clinical Dental Treatment Course

Oral function is closely related to brain function. Based on years of research in neuroscience and behavior, Professor Lin Chia-Shu of the university's School of Dentistry designed an interdisciplinary course titled "Brain, Behavior, and Dentistry." It is the world's first course to explore the connections between clinical dental treatment, the human brain, and patient behavior. In collaboration with the international online learning platform "FutureLearn," the course is offered to healthcare professionals, patients, and the general public in nearly 100 countries worldwide, helping them better understand the links between dental treatment, brain function, and patient behavior. This course has also won the Excellence Award from the Taiwan Open Course and Education Consortium (TOCEC).

Stewardship

Offering Free Psychological Counseling Services

As the pace of life accelerates and work pressures increase, many staff members are facing mental health challenges. To promote the psychological well-being of all university staff, the university's Health Psychology Center offers free one-on-one counseling and consultation services. These services aim to enhance resilience and teach effective methods for managing stress and emotions. From 2023 to June 2024, the center provided counseling to 389 staff members, addressing issues such as family relationships, self-identity, emotional concerns, romantic relationships, interpersonal dynamics, career development, gender identity, and health.

Mental Health Promotion Activities

The university's Health Psychology Center organizes mental health promotion lectures, workshops, and events each semester. These activities include online, interactive games, physical interactive exhibitions, in-person lectures, and stress-relief workshops. From 2023 to June 2024, 32 events were held, allowing staff to learn about mental health knowledge and skills through participation, helping to prevent and reduce mental health issues and minimizing their impact on work efficiency. Additionally, to strengthen the psychological resilience of faculty, staff, and students, the center launched a campaign in 2023 featuring the playful image of a "sloth," symbolizing a slower-paced lifestyle. The campaign encourages the university community to find their own rhythm to handle a busy schedule.

04

QUALITY EDUCATION

2019-2023 Publications	161
2019-2023 Percentage of all Taiwan Publications	4.1%
Course Units	5,473
Student Engagements with Units on SDG 4	92,009

Research

Open Educational Resources

The 2023 Open Education Global Conference was held from October 16 to 18 at the Edmonton Conference Center in Canada. The conference theme was "Building a Sustainable World Through Open Education." Professor Ta-Wei Li from the Department of Applied Chemistry at our university presented a teaching method for the interdisciplinary course "Principles and Practice of Virtual Chemistry Laboratories" during the conference. He also introduced using ChemCollective Virtual Lab to design new virtual chemistry experiments. This software, developed by Professor Yaron and his team at Carnegie Mellon University, allows students to conduct and create engaging chemistry experiments via computer. This method promotes a deeper understanding of the relationship between chemical reactions and fundamental scientific principles, making it a recommended open educational resource.

The World's First Chinese-Language Open Textbook

Professor Shu-Chen Chiang from our College of Hakka Studies published an important paper introducing the Hakka-language multimedia open textbook "Self-Healing of a Youngster—A Hakka Youth Book Adaptation of Kan Yao-ming's 'Killing Ghosts'." This textbook, adapted by student Xu Guang-zhi and illustrated with Zhang Wan-ru's picture book, is the first of its kind in Taiwan and globally in Chinese. It preserves Taiwan's Hakka linguistic heritage and includes important geographical, historical, and cultural concepts related to the Hakka community. The material is supplemented with Hakka language readings and CC-licensed historical audiovisual resources to promote the localization and decolonization of Hakka language courses, making it suitable for upper elementary students and older youth.

Social Impact

Partnering with Local High Schools to Promote AIoT Smart IoT Digital Education

To align with the government's curriculum guidelines for national education in the field of technology, our university's Social Responsibility Promotion Office has signed an educational partnership memorandum with Private Chung-Hsin School, Zhong-xiao Junior High School, and Dong-xing Junior High School in Hsinchu County. The goal is to advance technology education and talent development. Professor Kuei-Ann Wen, Executive Director of the Social Responsibility Promotion Office, shared our university's experiences in AIoT smart IoT digital education at Chung-Hsin School. In the initial phase of the collaboration, Chung-Hsin School provided venues and equipment, focusing on the "AIoT Smart IoT Digital Education Promotion Project," which integrates practical sensor courses with Scratch interactive game design. This initiative aims to enhance students' technological literacy and innovative thinking skills, injecting new vitality into Hsinchu County's education and cultivating young talent with technological creativity.

Hosting the "Semiconductor and Chip Design Science Camp"

In collaboration with Synopsys, our university's Alumni Association hosted the inaugural "Semiconductor and Chip Design Science Camp," attracting 160 high school students from Taiwan and abroad. The event featured a keynote speech by Taiwan's semiconductor authority, Professor Jack Sun, current Dean of the School of Industrial Academic Innovation. The camp also arranged for students to visit cleanrooms, practice soldering circuit boards, and engage in programming activities. The event aims to cultivate future semiconductor talent, helping students gain in-depth industry knowledge and inspire their interest. Taiwan's semiconductor industry is currently facing a talent shortage, and this camp is part of a long-term solution. The program will continue to expand in the future.

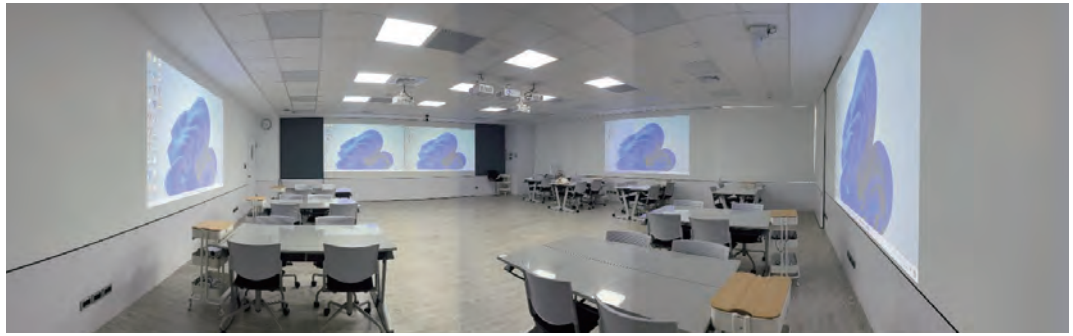
Education & Cultivation

Cross-campus Distance Learning

Since the merger in 2021, the school has made significant progress in information system integration and campus infrastructure construction, and it strives to provide a high-quality teaching and research environment to promote further development of academia and industry. The school has unified the wireless network services of the nine campuses, improved the network facilities at the Beitou campus, and increased the network speed in the dormitories to 1Gbps. In addition, the school is committed to cross-campus and cross-field learning. Through distance teaching classrooms and video conferencing software, it overcomes geographical limitations and supports cross-learning in medical biology and information engineering.

"Hakka Society and Culture Master's Credit Course" Opened

The School of Hakka Culture of our school collaborated with the Hakka Affairs Committee of the Taichung City Government to open the "Hakka Society and Culture Master's Credit Class" at the Shancheng Hakka Center in September 2023. Professor Hung-Yu Chang will offer the "Hakka Documentary Planning and Production" course, benefiting students from mountain cities. It is the first time the Hakka Culture Institute has launched a master's degree in-service class outside the school. The course covers practical techniques such as digital photography and editing and will produce Hakka-themed videos. This move provides opportunities for students in Taichung City to further their studies, promotes research on Hakka culture, and deepens the Hakka ethnic economy in Taichung.



04 QUALITY EDUCATION

Stewardship

The Affiliated Senior High School of National Yang Ming Chiao Tung University

Our university has signed a memorandum of cooperation with National Chu-Pei Senior High School to transition to the Affiliated Senior High School of National Yang Ming Chiao Tung University, which has officially entered the legal process. Our university, with its advanced facilities, resources, and outstanding faculty, along with a wealth of reputation and alumni resources, will use its strengths in the humanities and social sciences, biomedical sciences, AI, and engineering fields as a foundation in the future. Through a series of courses and research projects, we will extend higher education to high school students, helping them become more familiar with emerging fields and explore their interests and career directions early on. Additionally, this initiative will assist high school teachers in accessing advanced academic and technological achievements. Starting from the 113th academic year, the "Yang Ming Chiao Tung University Master Classes" (covering international humanities, electronic information, and biomedical sciences) will be gradually launched. These classes aim to strengthen Chu-Pei Senior High School in areas such as social humanities, biomedical fields, cutting-edge AI, bilingual literacy, international mobility, STEAM education, and industry-academia co-creation, balancing local care with an international perspective, and emphasizing both scientific inquiry and humanistic cultivation.

Winning the "Industry Co-Creation Model Award" at the Global View USR University Social Responsibility Awards

Our university participated for the first time in the 2023 Global View USR University Social Responsibility Awards and won the "Industry Co-Creation Model Award" with the project "Linking Industry, Government, and Academia to Enhance Technological Competence—Talent Cultivation in the Semiconductor and Key Technology Industries." In 2023, there were 120 competing projects, but only 23 were awarded, resulting in a win rate of just 19.1%. Through curriculum teaching, employment guidance, and career counseling, our university has established local connections with businesses, creating a lifelong learning environment. In collaboration with the Taoyuan-Hsinchu-Miaoli Branch of the Workforce Development Agency under the Ministry of Labor, this project provides training for talent in the semiconductor and key technology industries. The project aims to address the talent shortage in the high-tech industry and improve salary conditions. Our university is committed to nurturing top engineers while also assuming social responsibility, and through talent development, it has become a vital force in promoting sustainable development for local communities and industries.

05

GENDER EQUALITY

2019-2023 Publications	65
2019-2023 Percentage of all Taiwan Publications	8.4%
Course Units	147
Student Engagements with Units on SDG 5	2,364

Research

Gendered Social Mobility Phenomenon

Professor Mei-Ling Pan's research team from the Department of Humanities and Social Sciences conducted a study on Tibetan women exiled in India, exploring their social mobility from "female refugees" to "Tibetan nurses" and the resulting consequences. This research emphasizes a female-centered refugee study approach, which helps to understand the mechanisms of intergenerational social mobility among refugees and contributes to refugee studies in Third World countries. For refugee communities facing social development challenges, the phenomenon of intergenerational gendered social mobility holds significant reference value for addressing critical survival issues.

Female Labor Force Participation and Suicide Prevention

In Taiwan, employed women bear the dual burden of paid employment and unpaid family caregiving, and suicide prevention is a critical issue in contemporary public and mental health work. Professor Ying-Yeh Chen's research team from the Institute of Public Health investigated the relationship between female labor force participation (FLFP) and suicide rates. The study found that higher female labor force participation rates are associated with lower suicide rates, demonstrating the potential value of labor market participation as a suicide prevention method. The findings of this study have been published in the international journal *Archives of Suicide Research*.

05 GENDER EQUALITY

Social Impact

Niche Female Tech Power

The "Niche Female Tech Power" team, composed of students from various departments of our university and National Tsing Hua University, focuses on issues related to women in technology. By managing social media platforms and organizing a series of campus dialogue events, the team addresses the unmet needs of businesses regarding female empowerment. The team has organized a series of Tech Talk exchange activities, fostering a female-friendly environment in STEM by partnering with companies such as MediaTek, TSMC, and Synopsys. These companies have been invited to campus to engage in two-way dialogues with women who have doubts or uncertainties about entering the tech industry. This initiative promotes gender equality and diversity concepts on campus, deepening the core value of "inclusiveness" in STEM education.

Diverse Gender Landscape Tours

Our university's Sustainable and Peer Education Center (SPEC) organized the "Taipei Diverse Gender Landscape Tours," guiding students to learn about and understand the living spaces of gender minority groups. At various locations, members of gender minority groups share their life experiences, encouraging participants to interact with them with an open and respectful curiosity. Additionally, the tours are conducted in English and open to international students, fostering more cross-cultural dialogue on gender issues.

photo ／ Department of Information and Tourism,Taipei City Government.

Education & Cultivation

Exhibition on Sexual Violence Prevention

NYCU Gender Equality Education Committee, in collaboration with the Garden of Hope Foundation, organized the "Exhibition on Sexual Violence Prevention: Relationship Inquiry." The exhibition concept revolves around relationships, encouraging the telling of harm and providing a supportive environment for those affected. It guides students and faculty to reflect on interpersonal relationships' boundaries, raising awareness of sexual violence prevention. This exhibition also addresses the issue of "digital gender-based violence," aiming to enhance the online safety awareness of students and faculty.

Gender Issues Lectures

Our university's Health and Counseling Center organized university-wide and departmental lectures on gender issues, actively promoting gender equality and the prevention of power-based sexual harassment. These lectures remind students of the risks and personal rights associated with the amendments to the Gender Equality Education Act concerning teacher-student relationships, fostering a more equal and safe campus environment. The center also uses film analysis to discuss gender elements in movie plots and connect them to personal, intimate relationship experiences. In 2023, a total of 60 lectures and workshops were held, covering topics such as "Rainbow March: New Knowledge on Diverse Genders and Self-Identity" and "#MeToo Aftermath: How to Support Survivors of Sexual Violence," with a total of 3,375 participants.

Stewardship

Gender-Friendly Housing

Our university is committed to creating a friendly dormitory environment that promotes gender inclusivity and substantial equality in gender status. We continuously implement and embrace the values of gender diversity in our residential settings. In addition to establishing gender-friendly dormitories where students of different genders can live on separate floors, we also promote dormitory naming activities to eliminate gender stereotypes associated with dormitory names. Furthermore, we provide common areas shared by different genders and offer dormitory applications for transgender students. Additionally, our university's Office of Student Affairs has set up a gender-friendly section on its official website, providing information on gender-friendly dormitories and contact points. The details are as follows:

- Establishing Gender-Friendly Dormitories:
  Our university has set up gender-friendly dormitories, opening specific dormitories for students of different genders to live on separate floors. We have also implemented supporting measures such as installing anti-spy cameras and planning separate laundry spaces for different genders.
- Promoting Dormitory Naming Activities:
  To create a gender-friendly environment and eliminate gender stereotypes, our university held dormitory naming selection activities in 2023 and 2024. Dormitory names that previously carried gender binary impressions were renamed based on dormitory characteristics and student preferences.
- Opening Gender-Inclusive Common Areas:
  To create public spaces that promote gender inclusivity and substantial gender equality, our university's dormitory areas offer common facilities such as lounges and kitchens for all genders. These spaces are accessible to faculty, students, and staff regardless of gender, ethnicity, or age, thereby deepening the value of gender friendliness and eliminating gender barriers.
- Arranging Dormitories for Transgender Students:
  Our university has a dedicated contact point to proactively assist transgender students with their accommodation needs, preventing potential discomfort or friction due to differences in biological and psychological gender among roommates.

06

CLEAN WATER AND SANITATION

2019-2023 Publications	139
2019-2023 Percentage of all Taiwan Publications	4.4%
Course Units	25
Student Engagements with Units on SDG 6	455

Research

Improving the Efficiency of Wastewater Recycling Systems

Associate Professor Yi-Hsueh Chuang from our university's Graduate Institute of Environmental Engineering is dedicated to optimizing advanced oxidation processes (AOPs) in wastewater recycling systems. Professor Chuang's research focuses on different photocatalytic oxidants as part of AOPs, conducting in-depth investigations into the chemical mechanisms and reaction pathways involved. The research results are used to establish mathematical models applied to the design of treatment units and optimization of operating conditions. This research offers a solution for addressing future water shortages by advancing domestic wastewater treatment into alternative potable water sources. The project has been recognized with the 2022 "Ta-You Wu Memorial Award" by the National Science and Technology Council.

Mitigating Land Subsidence in Yunlin County

Professor Chein-Way Huang from the Department of Civil Engineering at our university focuses on the issue of land subsidence in Yunlin County, particularly its impact on the safety of Taiwan’s High-Speed Rail. Using gravity measurement techniques, Professor Huang’s team has established seven gravity observation points in the southern part of the Zhuoshui River alluvial fan—five in the subsidence area and two above unconsolidated aquifers—to estimate groundwater storage changes through residual gravity variations. The findings indicate that subsidence caused by excessive groundwater extraction can be mitigated by developing unconsolidated aquifers with recharge potential. The study recommends integrating gravity measurements with electrical resistivity imaging (ERI) to develop artificial recharge lakes, thus effectively alleviating subsidence and promoting sustainable water resource management. These findings have been published in the international journal *Engineering Geology*.

06 CLEAN WATER AND SANITATION

Social Impact

Enhancing National Water Resource Management and Disaster Response Capabilities

In response to the increasingly extreme rainfall patterns and higher frequency of events caused by climate change, the Disaster Prevention and Water Environment Research Center at our university has assisted the Seventh River Management Office of the Water Resources Agency in developing a 24/7 disaster prevention and response mechanism. This initiative aims to create a technological disaster monitoring and early warning environment for the region and develop an intelligent disaster prevention decision-making system. The system reduces the response time from days or hours to mere minutes or seconds, significantly improving the county government's ability to make quick disaster prevention and response decisions.

Hosting the "Sustainable Use of Groundwater Resources During the Century Drought" Seminar

To promote the sustainable management of groundwater resources, our university co-hosted the 15th Groundwater Resources and Water Quality Protection Symposium and the Annual Meeting of the Taiwan Association of Groundwater Resources and Hydrogeology. This year's seminar theme was "Sustainable Use of Groundwater Resources During the Century Drought." The seminar focused on topics such as groundwater resource planning, water quality protection, hydrogeological characteristics, adaptation strategies to extreme climate, groundwater quality protection, fostering knowledge exchange, and developing innovative technologies for groundwater resource and water quality protection in Taiwan.

Education & Cultivation

Reading Group on "Watershed Reform" in Western Taiwan

Our university's International Center for Cultural Studies is hosting a reading group on "Watershed Reform" in Western Taiwan. Through three field study projects, the group will focus on issues related to Taiwan's urban development and hydrological changes. The first session, "Taoyuan Aerotropolis," will lead participants through the changing reality of Taoyuan’ s ponds and rural labor communities. The second session in Hsinchu, titled "Touqian River," will take participants from the upstream Shouping Creek and along the various water intake and output points of the Touqian River, observing how water flows through different sections. The third session in Taipei will explore the religious practices of temples dedicated to Yinpong and Yinpua on Shezi Island, discussing the interwoven relationship between humans and water on an ontological level.

06 CLEAN WATER AND SANITATION

Education & Cultivation

Student Team Creates Green Water Solutions

In response to the growing water shortage and rising environmental awareness, the Arete Honors Program's Electrical Engineering division students formed a student startup team called "Water Continuation." This team aims to provide innovative green water supply systems for high-tech, water-intensive industries by integrating water resource allocation strategies for campsites, agricultural land, and major industrial water users. They have also established a "Water Rights Fulfillment" system for water source transactions among supplying enterprises, aiming not only to alleviate Taiwan's current water scarcity but also to promote the sustainable value of ESG for corporations. In 2024, the team will collaborate with the university to install small underground water storage devices for field trials, contributing to the achievement of sustainable development goals.

photo ／ Hsinchu City as Museum（2024）
https://hsinchucitymuseum.hccg.gov.tw/home/zh-tw/assets/757

Stewardship

Enhancing Campus Flood Resilience

Surveillance cameras have been installed near the Tingpu Canal adjacent to the Boai Campus to strengthen flood response capabilities. During heavy or continuous rainfall, security personnel can closely monitor the canal's water level through surveillance footage, and administrators from the Office of General Affairs can use mobile apps to monitor water level changes in real-time. If there is a rapid rise or the water level reaches a warning threshold, relevant departments will be immediately notified to activate flood control mechanisms, enhancing the campus's flood resilience. The school has also planned several drainage improvement projects, with completed works including rerouting sewage discharge paths, improving drainage systems, and advancing stormwater sewer connections to comprehensively improve the campus's overall drainage system and further enhance flood resilience.

Response Measures for Tritium-Contaminated Water Discharge

In response to the release of tritium-contaminated water from Japan's Fukushima plant, which has raised concerns among the public about potential impacts on marine water quality and seafood safety, the university's Environmental Protection and Safety and Health Center held a seminar titled "Understanding the Characteristics of Tritium and Taiwan's Response to Japan's Tritium Water Discharge." The seminar covered the properties of tritium, provided an overview of Japan's discharge plan and IAEA's oversight operations, and discussed Taiwan's countermeasures. It also addressed public concerns regarding Japan's tritium discharge through a Q&A session.

07

AFFORDABLE AND CLEAN ENERGY

2019-2023 Publications	1,032
2019-2023 Percentage of all Taiwan Publications	8.7%
Course Units	143
Student Engagements with Units on SDG 7	2,263

Research

Green Roof Demonstration Project

As global warming and the urban heat island effect intensify, our university's Professor Jehng-Jung Kao from the Graduate Institute of Environmental Engineering and Professor Hsin-Fei Meng from the Institute of Physics have collaborated on a "Green Roof Demonstration" project. This project involves the installation of over 20 transparent solar panels on the roof of the Environmental Engineering Building, along with the construction of a "DIYGreen Zero-Waste Circular Rooftop Garden" developed by Professor Kao's research team. The garden offers benefits such as insulation, carbon reduction, increased green coverage, and reduced stormwater runoff. It uses recycled bottles as the base and uses vermiculture to compost kitchen waste, generating organic fertilizer to promote plant growth. This system addresses the competition for sunlight between silicon solar panels and plants, achieving dual benefits of power generation and agriculture with the aim of harmonious coexistence with nature.

Enhancing Solar Panel Efficiency and Lifespan

Professor Hsin-Fei Meng from our university's Institute of Physics is actively engaged in research on organic photovoltaic devices, modules, and manufacturing processes to increase the efficiency and lifespan of large-area organic solar modules. Professor Meng and his research team have innovatively developed a blade coating process and module design that improve the crystallization of organic materials through material combination and design. This advancement significantly enhances the stability of organic photovoltaic modules in outdoor operation, boosting their power generation efficiency from 5% to 11% and extending their outdoor lifespan to 3-4 years, surpassing the current international literature.

07 AFFORDABLE AND CLEAN ENERGY

Social Impact

"Taiwan House" Wins Japan's Good Design Award and Golden Pin Design Award

The Transdisciplinary Design Innovation Shop (TDIS) team from our university has won the Japan "Good Design Award" with their project "1 House for All Taiwan House." The project aims to establish a sustainable urban renewal mechanism and utilize highly efficient renewable energy for building and operating houses, showcasing innovative architectural concepts. "Taiwan House" uses domestically produced engineered wood as the structural material to address social housing needs during urban renewal. It proposes an integrated solution that includes "sustainable construction industry upgrading," "urban renewal strategies," and "practicing housing justice." This project has received high praise from international judges, highlighting the urgency of advancing sustainable transformation in Taiwan.

Energy Education Center Opens for Public Tours

Our university's "TSMC-NCTU Energy Education Center," which opened in 2017, is now available for public tours by appointment. The center also serves as a research and experimentation space for related departments within the university, promoting concepts of sustainable energy, smart living, social engineering, and building technology. The Energy Education Center is designed with reinforced structures, upgraded eco-friendly materials, and integrated smart environmental control systems, featuring a central computer system that effectively maintains an optimal low-energy and comfortable living environment. Through water resource recycling and solar power-generating glass, the center is self-sufficient and contributes excess electricity to the nearby science park. In addition to being a green energy laboratory and a green technology experience site, the center embodies environmental protection principles, enhancing public imagination of sustainable green energy and smart living through interactive participation.

Education & Cultivation

Focusing on Semiconductors, Smart Vehicles, and Green Energy

Our university is focusing on three major areas: semiconductors, smart vehicles, and green energy. We have reached a consensus with the Industrial Technology Research Institute (ITRI) and Kyushu University in Japan, leading to the official signing of a memorandum of cooperation. This partnership will facilitate more opportunities for collaboration between Taiwan and Japan in developing advanced technologies and talent exchange. Yang Ming Chiao Tung University and Kyushu University possess strong academic research capabilities and forward-looking technological expertise, while ITRI has strengths in applied technology development and commercialization. Together, the three parties are committed to pioneering research and talent cultivation in semiconductors, smart vehicles, and green energy. Our university has long been a key driver of the semiconductor industry in Taiwan and hopes that through increased international cooperation, we can attract more international students and apply research results to the industry, injecting innovative technological energy into the sector.

Cultivating Green Energy Professionals

Our university's College of Artificial Intelligence is the first AI-focused college in Taiwan, aiming to become a leading international center for artificial intelligence research and education. Based on teaching and research trends, the College of Artificial Intelligence consists of three academic and research units: the Institute of Computational Intelligence, the Institute of Intelligent Systems, and the Institute of Smart Industry and Green Energy. The Institute of Smart Industry and Green Energy is dedicated to addressing the future demand for AI and green energy professionals in Taiwan. It plans related green energy and research directions and is committed to cultivating professionals in AI and green energy to meet the substantial talent needs of Taiwan's future innovative green energy industry.

Stewardship

Intelligent Green Energy Industry-Academia Co-Creation Mechanism

Our university has partnered with Wistron Corporation to establish the "Joint Industrial Innovation Center for AI and Green Energy" at the Tainan Campus. In the first semester of the 113th academic year, we will launch the "Master's Program in Intelligent IoT Industry" to promote cross-disciplinary research in smart manufacturing and green energy electronics through innovative smart services, smart technology, and intelligent industrial IoT. This initiative seeks to foster industry-academia co-creation collaborations between our university and the local industry in Tainan. The establishment of the R&D center will realize the mechanism for co-creation in research and talent cultivation in intelligent manufacturing and smart green energy, introduce a unique co-creation model for advanced production lines, and promote cross-disciplinary research collaboration. It will also set a new trend in product and production line development and cross-department talent cultivation collaboration. The center will operate with an open mechanism, inviting scholars and experts in related fields to collaborate, making it the first world-class industry-academia co-creation R&D center and talent cultivation base in intelligent manufacturing and smart green energy in the nation.

International Collaboration Promoting Energy Technology Development

On October 30, 2023, Professor Yi Chang, Dean of the International Semiconductor Industry Academy at our university, led a delegation to visit the Indian Institute of Technology, Delhi (IIT Delhi), and signed a renewal of the cooperation memorandum with the institute's president, Prof. Rangan Banerjee. Since 2016, the two institutions have collaborated closely in multiple fields, achieving significant results. They discussed expanding the existing cooperation to include biomedical, energy, and humanities fields, with plans to send at least 50 PhD students to Taiwan each year. The collaboration will focus on practical research exchanges and cooperation in application areas such as drones, smart manufacturing, electric vehicles and autonomous vehicles, carbon capture and utilization, renewable energy, and hydrogen energy, further strengthening and deepening the partnership between the two institutions.

08

DECENT WORK AND ECONOMIC GROWTH

2019-2023 Publications	103
2019-2023 Percentage of all Taiwan Publications	3.1%
Course Units	1,592
Student Engagements with Units on SDG 8	28,795

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Research

Creating a Friendly Workplace Environment

The Lab of Occupational Health and Safety (LOHAS) team, led by Associate Professor Guo-Yang Gao of the Department of Management Science at our university, is dedicated to improving employee health and actively promoting the establishment of a friendly workplace environment. LOHAS's research has found that industrial-grade foot mats can effectively reduce musculoskeletal pain for workers who stand and walk for extended periods and improve work efficiency. This research demonstrates that creating a healthy and safe work environment benefits employee health and enhances corporate performance. Additionally, this research achievement won the Excellence Award in the "Best Practices for Preventing Ergonomic Hazards in the Workplace" competition organized by the Occupational Safety and Health Administration of the Ministry of Labor.

Employee Benefits and Corporate Financial Performance

A comprehensive employee benefits system can help companies maintain harmonious labor relations and improve corporate performance. Professor Wan-Li Liang of our university's Department of Information Management and Finance used big data to examine the relationship between employee benefits and corporate financial performance. The research results indicate a positive correlation between employee-friendly measures and corporate performance, with employee benefits also positively associated with productivity and innovation investment, particularly in labor-intensive companies and those with better corporate governance. This research has been published in the international journal *Managerial Finance*.

08 DECENT WORK AND ECONOMIC GROWTH

Social Impact

Addressing the Semiconductor Industry Talent Shortage

The technology industry faces dual challenges of external competitive pressures and internal talent cultivation and shortage. In response to the industry's demand for semiconductor talent, NYCU teamed up with the Taoyuan-Hsinchu-Miaoli regional branch of the Ministry of Labor's Workforce Development Agency to establish the "Semiconductors and Key Tech Industry Talent Development Base." Since its inception in 2022, the base has trained nearly 537 students who have entered the semiconductor industry, with nearly one-third coming from interdisciplinary backgrounds. In 2024, the base will launch several specialized talent development programs covering the most popular technology topics, including the "Semiconductor and AI Applications Professional Talent Development Program," the "Photonics (Silicon Photonics & Quantum) and AI Applications Professional Talent Development Program," and the "Electronics and AI Applications Professional Talent Development Program." These initiatives aim to channel trained talent into semiconductor-related industries to alleviate the talent shortage problem.

Open House Corporate Campus Recruitment

Our university's "OPEN HOUSE" is the nation's largest corporate campus recruitment event, held twice annually in the spring and fall. The event includes a job fair, corporate presentations, company visits, and one-on-one consultations with corporate mentors, helping students secure good jobs and companies find quality talent. The 2023 Fall Job Fair attracted 58 companies, offering over 5,000 job openings. Besides the semiconductor industry, other participating sectors included information software, consumer electronics, internet communications, human resources, startups, wholesale and retail, and transportation and warehousing, allowing students to familiarize themselves with the job market and environment early on. Additionally, bilingual job consultations and recruitment activities specifically for foreign students are also provided to encourage foreign students to stay and work in Taiwan after graduation.

Education & Cultivation

Understanding Human Trafficking and Forced Labor

To enhance students' awareness of the prohibition of human trafficking and forced labor, the International Center for Cultural Studies at our university is organizing a workshop titled "Outsourcing Employment Systems in Labor Supply Chains and Fraudulent Industrial Parks." This workshop will invite scholars, independent media, and non-governmental organizations from various regions to delve into the rapidly evolving outsourcing employment systems within labor supply chains and issues related to human trafficking. The focus will be on recent fraud cases in Taiwan, Cambodia, Indonesia, the Philippines, Thailand, Myanmar, and other Southeast Asian countries. The workshop will also analyze how these illegal activities thrive in legal grey areas.

Developing Workplace Soft Skills

To enhance students' competitiveness in the workplace, the Career Development Section of the Student Affairs Office at our university regularly organizes the "Workplace Soft Skills Lecture Series." Topics include workplace communication and upward management, entrepreneurship SOPs, workplace presentation techniques, career interests, and competency development. These lectures aim to supplement the soft skills most needed in the workplace, improving students' performance in interpersonal relationships, teamwork, communication, emotional management, learning attitude, and stress resilience. The goal is to cultivate transferable comprehensive skills that strengthen employability and competitiveness.

Stewardship

Employee Assistance Programs (EAPs)

Our school promotes the "Employee Assistance Programs" (EAPs) to create a caring and supportive work environment, helping faculty and staff address issues that may affect their work performance. It allows them to work with a healthy body and mind, improving their morale and service efficiency. The school's Human Resources Office website has an EAP section that provides information on upcoming events, discussions on various mental and physical health topics, and related reports. The specific services provided include:

- Work: New employee training, work-life balance, workplace interpersonal communication, career (retirement) planning consultations, flexible working hours, and family care leave to support family-friendly policies, as well as friendly facilities such as priority parking for pregnant employees and designated parking spaces for people with disabilities.
- Life: Childcare and school enrollment assistance services, consultations on legal issues, family and marriage matters, insurance, and tax issues, combined with resources within the school and the community.
- Health: Exercise and fitness, medical care, vaccinations, stress management, emotional management, communication between couples and parents with children, and different counselors or external psychological counseling services based on employees' needs or geographical preferences.

Workplace Zero-Bullying Policy

To maintain a harmonious workplace and ensure all employees' occupational safety and labor rights, NYCU issued the written notice "Prohibition of Workplace Violence," which states that NYCU will not tolerate any form of workplace bullying or discrimination between supervisors and employees. NYCU also provides channels for consultations and reports about workplace bullying to ensure employees' physical and mental safety.

09

INDUSTRY, INNOVATION AND INFRASTRUCTURE

2019-2023 Publications	428
2019-2023 Percentage of all Taiwan Publications	6%
Course Units	1,436
Student Engagements with Units on SDG 9	23,092

Research

2023 Future Tech Award

The "2023 Future Tech Award," co-organized by the National Science and Technology Council, Academia Sinica, Ministry of Education, and Ministry of Health and Welfare, focuses on four main areas: "Net Zero Technology," "AIoT Smart Applications," "Biotechnology, New Drugs, and Medical Devices," and "Humanities and Technology." The competition attracted over 500 entries, with 80 key technology innovations ultimately selected. Our university had 12 winning teams, showcasing innovative technologies such as the "Multi-objective Time Series Early Prediction Technology and Emergency Warning System" developed by Professor Vincent S. Tseng from the Department of Computer Science and Information Engineering and the "In-needle Ultrasound Thoracic Regional Anesthesia Guidance System" from Professor Huihua-Kenny Chiang's team in the Department of Biomedical Engineering. These achievements highlight the university's contributions to technological innovation and create significant value for Taiwan's scientific research.

Promotion of the Research Data Management Platform

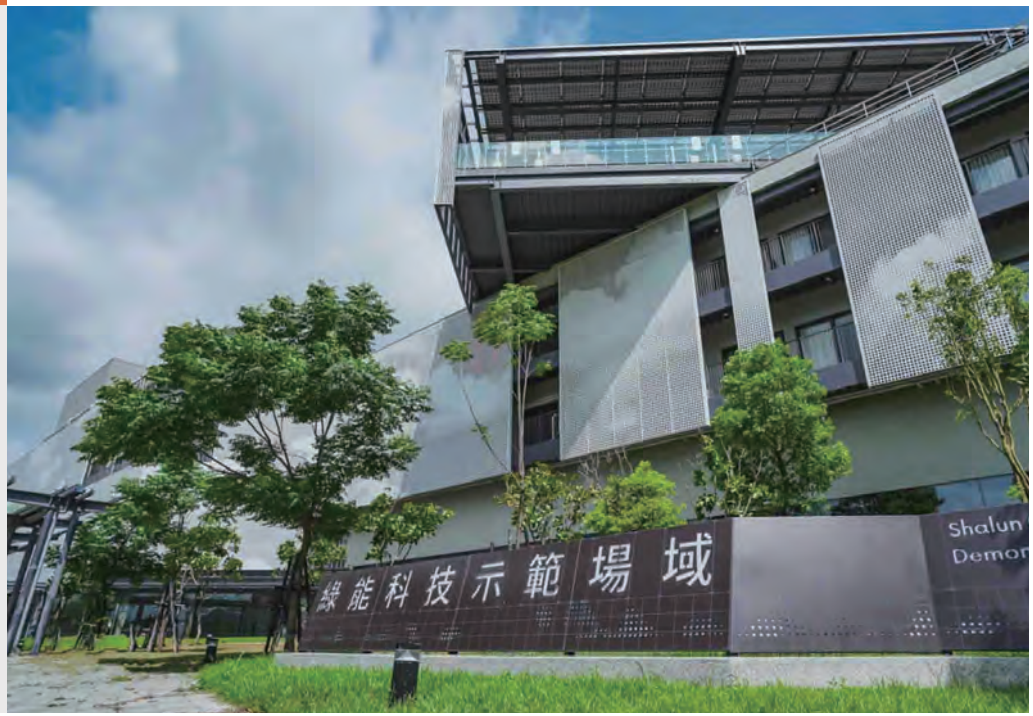
In 2022, our university established the Research Data Management Platform (NYCU Dataverse) to provide researchers with more convenient data preservation, sharing, and management services. This platform is one of the university's foundational infrastructures for driving research innovation. It adheres to the FAIR (Findable, Accessible, Interoperable, Reusable) principles, promoting open science, facilitating the sustainable utilization of research outcomes, and enhancing research transparency and international visibility. Fostering a more favorable environment for researchers encourages further innovative research and teaching applications. As of July 2024, the NYCU Dataverse platform has collected 344 datasets and 6,151 files, with global downloads reaching 2,526 times according to Metrics indicators.

09 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Social Impact

Enhancing the R&D Capabilities of Sharon Smart Green Energy Science City

The Tainan campus of our university is located in the Shalun Smart Green Energy Science City in Tainan. The College of Smart Science and Green Energy, also known as the "AI College," primarily aims to cultivate talent with both AI theoretical knowledge and practical skills, covering the current AI industry needs in areas such as the Internet of Things (IoT), healthcare, green energy, agriculture, drones, and more. The college has already achieved significant results in various industrial sectors, such as assisting drones in recognizing small objects, providing robotic care in long-term care facilities, preventing agricultural diseases through the agricultural IoT, improving radiotherapy scan images, urban planning, and architectural design. Moreover, with the support of companies like NVIDIA, AUO, and Wistron, the university has established R&D and innovation centers in Tainan's Shalun. The AI development solutions created in Shalun aim to help professionals solve problems and reduce costs effectively across related industries through AI integration.



Pre-employment Training Courses for the Semiconductor Industry

Our university's Laser System Research Center, commissioned by the Hsinchu City Government's Department of Labor, organizes pre-employment training courses for the semiconductor industry. These courses aim to cultivate talent in semiconductors, optoelectronics, and data analysis applications with a global market perspective through solid training, career counseling, and corporate matching opportunities. The training is open to working professionals, job seekers, and students. Courses previously held include the "Technology and AI Application Talent Training Program," "FPGA and Microelectronics Technology Program," "Electronics and AI Application Professional Talent Program," and the "Semiconductor and AI Application Professional Talent Program." The teaching methods combine full-day instruction with recorded lectures, offering one-on-one employment counseling such as resume revision, interview preparation, and career discussions with teaching assistants. The program aims to establish local connections with companies through comprehensive vocational training, fostering cross-disciplinary talent through collaboration between industry, government, and academia.

Education & Cultivation

Student-formed Formula Racing Team

Our university's Formula Racing Team comprises students from various departments, including engineering, business management, and more. By integrating each member's diverse knowledge, skills, expertise, and perspectives, the team fosters creativity and fully demonstrates the potential of cross-disciplinary collaboration. The team relies entirely on students seeking support from the university, securing sponsorship for equipment, and funding from various companies. Additionally, seven professors from the Electrical Engineering and Mechanical Engineering departments have been invited to provide technical guidance, significantly enhancing the team's technical capabilities. In 2021, the team unveiled its fuel-powered race car and won first place in the Taiwan Formula Student competition. Recently, the team has begun researching electric race cars and plans to participate in the world’ s largest and most influential student engineering competition, the "Formula SAE (FSAE)," in Australia by the end of 2024.

Expanding the Semiconductor Talent Pool

In response to the diverse talent needs of the global semiconductor industry, which requires not only technical and managerial personnel but also cross-disciplinary and cross-cultural professionals, our university established the first "Department of Semiconductor Engineering" in 2023, housed within the College of Electrical Engineering. The department is divided into two tracks: Solid-State Electronics and Nanoscience. The first cohort of 65 students will be admitted in September 2024. The department maintains close ties with the industry and invites companies to become partners, offering senior-year internships and opportunities for students to study abroad. The department has already gained strong support from TSMC and aims to secure further backing from other companies. As the first department of semiconductor engineering in a research-oriented university, it seeks to attract more talented young professors and students to strengthen both research and industrial development capabilities in the semiconductor field.

Stewardship

Establishing a GPU High-Performance Computing Platform

Our university has built a "GPU High-Performance Computing Platform to meet the advanced AI computing demands." The platform currently includes two Nvidia DGX H100 servers and three Nvidia DGX H200 servers, integrated with a high-speed parallel AI file system. Coupled with wireless bandwidth switches, this setup allows the use of 40 GPU cards in a cluster, increasing both the number and flexibility of GPU cards available for computation. The platform is equipped with resource scheduling and management software, enabling efficient and flexible provision of AI computing resources to research teams across the university, thereby enhancing our AI research capabilities. The platform aims to integrate and provide the necessary GPU resources for the university, improving the efficiency of resource allocation campus-wide. Additionally, power usage efficiency reached 1.58 by utilizing the university's green energy data center, effectively conserving energy and reducing carbon emissions. The maintenance team will continue to work toward resource-sharing and energy-saving goals, contributing to sustainability efforts.

Promoting a Sustainable Endowment Fund

Our university is promoting the establishment of a sustainable endowment fund modeled after Ivy League universities in the U.S. This fund will generate income through dividends or interest without utilizing the principal. The goal is to reach NT$50 billion in the endowment by 2035, allowing the university to cover a significant portion of its expenses through investment returns. This approach mirrors the sustainable financial models used by leading American universities.

10

REDUCED INEQUALITIES

2019-2023 Publications	101
2019-2023 Percentage of all Taiwan Publications	6.2%
Course Units	86
Student Engagements with Units on SDG 10	2,090

Research

Inequality Issues During the COVID-19 Pandemic

The university's International Center for Cultural Studies (ICCS-NYCU) hosted the "2023 Summer School" organized by the Association of Cultural Studies (ACS), attracting up to 100 participants from 17 countries. Experts, scholars, and young students from around the world gathered to discuss the colonial structures of the 21st century, particularly focusing on various global social inequalities exacerbated by the impact of COVID-19. Topics included population migration, transnational migrant workers, environmental crises, and artistic interventions. Additionally, the university held the inauguration ceremony for the "Transit Asia Research Network" (TARN), which aims to promote interdisciplinary, inter-institutional, and international collaborations in the fields of humanities, social sciences, and the arts, fostering global connections.

Eliminating Health Inequality

The development of smart healthcare is an inevitable trend for the future. Professor Yu-Chi Chen from the university's Graduate Institute of Clinical Nursing conducted research on e-Health literacy, finding that improving patients' digital health literacy can enhance empowerment and prevent health inequality. The study suggests that healthcare providers should focus on creating a more human-centered digital healthcare environment, enabling medical professionals to offer patients comprehensive guidance on digital health literacy. The effort would enhance patients' proactivity and confidence in managing their health conditions, fostering positive self-management behaviors. The findings of this research have been published in the international journal *Journal of Clinical Nursing*.

Social Impact

Digital Dental Mobile Clinic

With support from the Bureau of Foreign Trade, the Taiwan External Trade Development Council, and the Taiwan Altruistic Social Resource Integration Studio, the university's dentistry team transformed a nine-seater minibus into a "Digital Dental Mobile Clinic." The vehicle is equipped with digital dental equipment, including a computer numerical control milling machine, 3D printer, oral scanner, and dental design software. In May 2023, the mobile clinic traveled to Nan'ao in Yilan to provide oral health check-ups, enhancing the speed and depth of dental care in remote areas. Bringing the latest digital dental technology to Nan'ao eased the burden on residents who would otherwise have to travel to the city for treatment, ensuring convenient local oral healthcare for the community.

Audio Magazine for the Visually Impaired

The university's long-standing initiative, the "NYCU Audio Magazine for Visually Impaired People," aims to uphold the reading rights of the visually impaired by providing them with the latest magazine information. This project helps eliminate social and educational inequalities caused by physical disabilities. Since 1999, volunteers from the Audio Magazine team have recorded audiobooks to serve visually impaired students and extend the service to the broader visually impaired community. Additionally, an accessible website provides convenient, real-time access to audio materials integrated with the National Taiwan Library’ s search system, sharing audiobook content and expanding its audience. In 2023, the university participated in the "2023 Asia-Pacific and Taiwan Sustainability Action Awards," hosted by the Taiwan Institute for Sustainable Energy. The "NYCU Audio Magazine for Visually Impaired People" won the Gold Award in Taiwan's Sustainability Action category and the Bronze Award in the Asia-Pacific Sustainability Action category.

Education & Cultivation

Cultivating Medical Talent in Rural Areas

The university has launched the "Star of the Tribe: Smart Rural Health Empowerment Program," which brings together resources from the College of Nursing, College of Medicine, College of Humanities, Arts, and Social Sciences, College of Pharmaceutical Sciences, and College of Electrical Engineering. The program also integrates the university-affiliated hospital to establish four working groups: "Rural Medical Education," "Tribal Safety," "Community Health," and "Smart Healthcare." These initiatives bring medical services and education to Nan'ao, helping to cultivate local medical talent and promote rural revitalization. Additionally, the program introduces digital technology to develop a smart healthcare system for the elderly, working together to protect community health and safety while creating a sustainable rural healthcare model.

10 REDUCED INEQUALITIES

Education & Cultivation

Comprehensive Online Learning Resources

The university's "ewant Open Education Platform" is Taiwan's largest open course platform. It not only shares higher education resources with the public but also focuses on expanding learning opportunities for high school students, promoting self-directed learning and flexible course selection. As of September 2023, the platform has accumulated over 470,000 registered users, with more than 10,000 students engaging in online learning weekly. In addition to promoting self-learning for high school students and offering general education credits for university students, the platform has launched immersive camps, bilingual online study tours, and high school talent development programs. Furthermore, in collaboration with the Ministry of Education, ewant Platform has pioneered a new model for general education, offering more than 37 fully online courses in 2023. These courses cover a wide range of disciplines, with credits recognized by 62 universities and colleges, allowing students to continue their studies during the summer break.

Stewardship

Comprehensive Support Mechanism for Disadvantaged Students

To assist economically disadvantaged students in pursuing their studies without worries, the university has established five major support mechanisms: "Basic Academic Tutoring," "Language and International Exchange Support," "Diverse Learning Support," "Career Exploration Support," and "Social Empowerment and Health Counseling." These include subsidies for purchasing books, one-on-one tutoring provided by student tutors hired by the university, encouragement to form study groups, research and learning grants, and various language enhancement programs and international exchange opportunities to broaden students' global perspectives. The university offers off-campus vocational training, one-on-one career counseling, and internship opportunities for the transition between academic and career life. Additionally, comprehensive educational resources and financial aid are available to support students throughout their studies. Psychological counseling subsidies are also provided for emotional support, and through social empowerment programs, students are encouraged to participate in community service groups or volunteer activities on campus, allowing students who have received support to use their abilities to help others, passing on the love.

Implementing Menstrual Equity Policy

To address period poverty, students from the university's College of Hakka Studies initiated a menstrual equity campaign, setting up dispensers for free menstrual products outside the women's restrooms in the college to provide teachers and students with access to free supplies. Courses in the humanities and social sciences emphasize theory and encourage social practice, helping to eliminate taboos and stigmas around menstruation that contribute to inequality and creating a menstrual-friendly environment. The university's health center and all female dormitories also provide emergency menstrual supplies, fostering and implementing a friendly environment that ensures the availability of diverse menstrual products.

11

SUSTAINABLE CITIES AND COMMUNITIES

2019-2023 Publications	278
2019-2023 Percentage of all Taiwan Publications	6.1%
Course Units	547
Student Engagements with Units on SDG 11	10,961

Make cities and human settlements inclusive, safe, resilient and sustainable.

Research

Balancing Supply and Demand for Shared Bicycles

As a green, environmentally friendly, and healthy mode of transportation, shared bicycles play a key role in alleviating traffic congestion and reducing carbon emissions. Professor Tzu-Hui Yen from our university's Department of Transportation and Logistics Management conducted a case study on Taipei City to explore the supply and demand of YouBike, the city's shared bicycle system. The study compared the demand and supply across over 400 regions or neighborhoods to identify service gaps and areas of imbalance. The results show that YouBike effectively provides first-mile and last-mile services for the MRT network. However, evidence of service mismatches was found within the study area, such as areas with high service supply but low demand. These findings can help cities interested in introducing bicycle-sharing systems improve their first-mile and last-mile transportation services. The study has been published in the international journal *Journal of Transport Geography*.

Constructing Intelligent Transportation with Deep Learning Methods

The development of intelligent transportation systems has effectively reduced energy consumption and greenhouse gas emissions throughout the transportation process. Professor Ming-Feng Zhang and his research team from our university's Graduate Institute of Computer Science and Engineering have proposed a new deep learning method called Bidirectional Isometric Gated Recurrent Unit (BDIGRU). This method is used to predict travel time and plan routes. Empirical results using big transportation data show that this method significantly improves the accuracy of travel time predictions and identifies the optimal vehicle routes with the shortest travel times. The findings can help drivers plan low-carbon routes, achieving energy savings and carbon reduction goals. This research has been published in the international journal *Annals of Operations Research*.

Social Impact

Showcasing Hakka Cultural Heritage

In May 2023, our university's College of Hakka Studies hosted two exhibitions: the "Uematsu Archive Static Exhibition" and "Between Ritual and Collection: The Xianglin Liu Family Ancient Artifacts Special Exhibition." These exhibitions highlighted the results of the college's years of cross-national and interdisciplinary collaborations. While the exhibitions were open to faculty and students, they were also extended to the public, particularly those interested in Hakka history and culture. After receiving the field research notes and visual records of the late Japanese scholar Uematsu Akira from northern Taiwan's Hakka regions in 2017, the university established the "Uematsu Archive." Students from the College of Hakka Studies assisted in organizing, cataloging, and correcting the archive’ s materials. The Liu Family Artifacts Exhibition not only displayed items from the Liu family of Xianglin Township, Hsinchu, but also, for the first time, showcased a replica of a portrait of their ancestors.

Creating Human-Centered Smart Green Transportation

The Department of Transportation and Logistics Management at our university, in collaboration with the Chinese Institute of Transportation and the Department of Civil Engineering at National Taiwan University, organized the "112th Academic Year Transportation Roots Competition for High School Students." The competition centered on the theme "Designing Friendly Urban Transportation: From the Perspective of Pedestrians and Public Transport Users," encouraging high school students to reflect on their everyday experiences and observations of the surrounding traffic environment. The goal was to inspire creative solutions or technological applications that could make transportation safer, more environmentally friendly, and sustainable, ultimately creating a human-centered smart green transportation system. In addition to the competition, a youth transportation camp was organized, featuring field visits and training to cultivate young talents and inspire more ideas and attention towards transportation services in their daily lives.

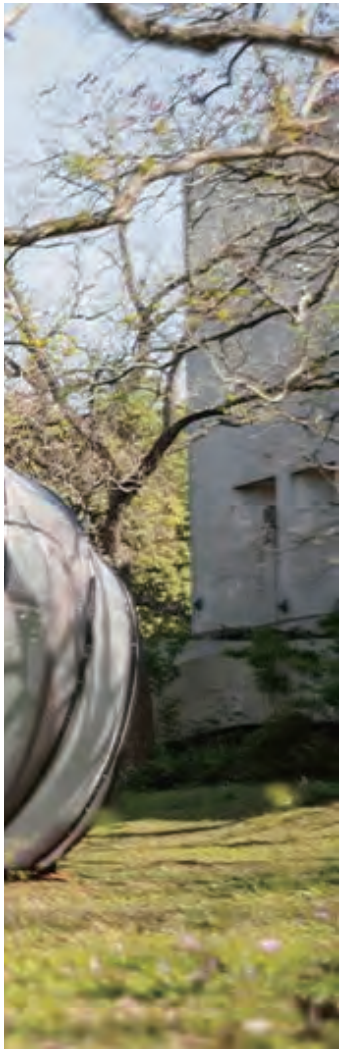
Education & Cultivation

Introducing Technology for Inclusive Rural Experiences

Associate Professor Sirirat Sae Lin from our university's Graduate Institute of Technology Management is leading the "2023 University Rural Practice Co-Creation Project." As part of this project, he developed a course module titled "Introducing Technology for Inclusive Rural Experiences." The module is based on creative thinking and problem-solving, with field exploration as its core concept. It integrates design thinking and co-creation with business partnerships to propose inclusive rural experience products or services enhanced by technology, aiming to balance technological innovation and commercial viability. Through innovative teaching and industry collaboration, the program leads students into rural environments to help them understand the importance of friendly tourism. It encourages them to create inclusive rural tourism products or services from a youth perspective, with the goal of mutual benefit for rural communities. This initiative is not only significant for people with disabilities but also introduces innovative and creative product ideas into rural areas, injecting new energy and opportunities for rural development.

Promoting Local Revitalization in Southeast Asia

In August 2023, our university's College of Hakka Studies led twenty students to Kuching, Serian, and Siburan in Sarawak, Malaysia, for the "Southeast Asia Hakka Villages Local Revitalization Exchange" and an on-site teaching program. This activity focused on the theme of "Local Revitalization," where our university’ s team shared the theories and practices of local revitalization in Taiwan's Hakka communities. They also conducted initial discussions and exchanges on the possibilities of local revitalization activities between Taiwan and Malaysia. The on-site teaching program, themed "Chinese Society and Culture in Southeast Asia," allowed students to conduct a three-week field study in Malaysia, exploring how local revitalization can drive and address local livelihood issues.



Stewardship

Sustainable Action: Bamboo Cubed

Bamboo, known for its rapid growth, is a highly eco-friendly, carbon-negative material. Bamboo holds great potential for application in the pursuit of net-zero carbon emissions and environmental sustainability. Bamboo is also a symbol of our university, representing the school’ s spirit. "Bamboo Cubed" refers to the combination of Hsinchu, NYCU, and bamboo. Through events such as the World Bamboo Forum, bamboo construction projects, and the International Bamboo Business Expo, global experts and businesses are brought together to promote technical exchange and collaboration, showcasing and implementing bamboo in living environments to improve industry efficiency while reducing environmental impact. These activities also serve as examples of sustainable action for the public and campus users, spreading knowledge about bamboo and incorporating innovative carbon-negative bamboo structures into the campus environment, thus promoting sustainable development. The initiative includes:

- World Bamboo Forum: An international academic forum focused on bamboo, covering topics such as the green economy, manufacturing processes, and design applications of bamboo.
- Bamboo Construction and Design Exhibition: Six construction works on campus, along with two related design exhibitions.
- International Bamboo Business Expo: Showcase of domestic and international products, craftsmanship, and technologies related to bamboo utilization and manufacturing.
- Campus Bamboo Utilization: Bamboo from the campus is used to create booths for exhibition events.
- Supporting Actions: A documentary on campus bamboo usage, bamboo cuisine, and a "Miniature Bamboo Garden" project.

12

RESPONSIBLE CONSUMPTION AND PRODUCTION

2019-2023 Publications	103
2019-2023 Percentage of all Taiwan Publications	2.9%
Course Units	455
Student Engagements with Units on SDG 12	7,738

Research

Developing Low-Cost Recyclable Solid Rockets

A team of 11 students from the university's Graduate Institute of Space Systems Engineering, the SSTO team, successfully launched their homemade solid rocket at the XuHai launch site in Pingtung. After the launch, a recovery vessel retrieved the rocket from the ocean, completing the mission as planned. The SSTO team became the first at XuHai to achieve full rocket recovery post-launch. This mission aimed to develop a low-cost, recyclable rocket capable of flying 1 kilometer high, which could be used for future educational or competitive purposes. The rocket's propulsion system was designed using RNX solid propellant, which is both cost-effective and highly safe and could generate a maximum thrust of 200 kilograms. This mission was also part of the "Space Systems Integration" course, where students had only one chance to test the flight with limited resources. The team collaborated and planned the launch mission by applying systems engineering principles. The design featured a high degree of modularity and extensively used commercially available components to reduce costs, providing students with practical learning experiences in systems engineering and integration through hands-on work.

Research

Reducing Material Usage with Advanced Timber Technology

A team comprising Director Pei-Hsien Hsu, Associate Professor Jun-Hao Hou from the university's Graduate Institute of Architecture, and Professor Kristof Crolla from the University of Hong Kong designed and built a new wooden pavilion called "KATENARA" at the Dongshi Forestry Culture Park. This innovative wooden structure uses glued curved timber to create a catenary line structure. Although the lengths and curves vary, a single mold can be used for the entire structure. Using algorithms to optimize the mold shape reduces material consumption, significantly lowering the modeling cost. The installation does not require heavy machinery, making this an eco-friendlier and more sustainable wooden construction method. The completion of "KATENARA" demonstrates the advantages of using locally sourced wood, the sustainability of natural building materials, and their aesthetic value. It also serves as a design practice and contributes to public education on sustainable architecture.

Social Impact

DIYGreen Zero-Waste Circular Urban Farm Practical Foundation Course

Our university's Center for Continuing Education has introduced a "DIYGreen Zero-Waste Circular Urban Farm Practical Foundation Course." This course aims to promote the innovative DIY circular urban farm developed by Professor Jehng-Jung Kao and his research team at the Institute of Environmental Engineering. It is the world's first DIY urban farm that uses recycled bottles as its base. DIYGreen is designed to suit Taiwan's urban heat island characteristics. It allows for creating a garden on any flat concrete surface (such as balconies, terraces, ground level, or rooftops) where individuals can safely grow high-quality vegetables, fruits, and flowers. The DIY Green system is suitable for all ages, from children to seniors, who want to build gardens. It also offers numerous environmental and food safety benefits. The research team hopes that through this course, their findings and innovations can be widely shared with the general public, making sustainable urban farming accessible to everyone.

Integration of Environmental Protection and Architectural Aesthetics

The "2023 Island Bamboo Architecture Exhibition" is being held at the Guangfu campus of the university, exploring the potential applications of bamboo architecture in modern society. With bamboo as the primary construction material, the exhibition showcases the beauty of architecture while emphasizing its practicality in environmental protection and sustainable development. It also marks a new chapter in the development of Taiwan's architecture and bamboo industry. The project for the "2023 Island Bamboo Architecture Exhibition" focuses on creating small-scale bamboo structures that meet practical, social, aesthetic, and weather-resistant requirements, aiming to demonstrate the adaptability of bamboo construction in modern life. The exhibition area at the university features five architectural installation artworks, one of which is titled "MemutAR" (Bamboo Spiral Illusion Dwelling). This piece utilizes augmented reality technology to assist in patterning and recreating the construction methods of the Indonesian team, representing the environmental significance of bamboo construction and the collaborative cross-border production efforts.

Education & Cultivation

Recycled Fish Scales for 3D Printing and Circular Design Creations

The university's Innovation and Creativity Workshop (Innovative Creative Technology, ICT) offers a course titled "Fish Scale Paste 3D Printing." The course introduces how to use fish scales, a byproduct of the fishing industry, as a material for 3D printing. It utilizes parametric models to assist in designing container objects, creating hollow structures and surface textures that promote drying and reduce shrinkage, and prints them using a specialized 3D printer. In addition to explaining the process of handling discarded fish scales and the mechanisms of paste 3D printing, the course provides hands-on experience, allowing students to gain a deeper understanding of aquatic waste and related Sustainable Development Goals (SDG) issues.

Sustainability Week: Campus Car-Free Day and Sustainability Market

Our university hosted a Sustainability Week in response to global sustainability issues, showcasing the achievements of various university projects on social responsibility and sustainable development. Through the momentum generated by this event, we aimed to foster awareness and commitment among faculty and students toward sustainability issues. One of the key initiatives is "Car-Free Campus Day," which encourages all campuses to reduce car usage, walk more, and make better use of shared transportation options, with support led by the university president and administrative leaders. The "Sustainability Market" attracted local farmers and vendors and aligned with the university's initiatives to reduce disposable utensils and bottled water. Additionally, a weaving workshop was held to promote the recycling of old clothes, highlighting the importance of responsible production and consumption.

Stewardship

Green Procurement and Green Office Initiatives

Our university is actively participating in the "National Green Living" initiative, encouraging faculty, staff, and students to adopt carbon-reduction behaviors and environmental protection efforts, aiming to incorporate green living into daily life and collectively achieve the goal of net-zero emissions. From 2021 to 2023, the university has achieved a 100% response rate in both "green consumption" and "green office" initiatives. Green consumption prioritizes environmentally friendly, healthy, and renewable products to minimize negative impacts on ecological and environmental systems. Green office practices include conserving energy and resources in the workplace, such as holding virtual meetings, controlling indoor temperatures, enhancing environmental beautification, printing less and using double-sided paper, reducing elevator usage, minimizing disposable utensils and bottled water, practicing waste sorting and resource recycling, encouraging the use of public transportation, and choosing green venues for events.

Green Dining

Food is an indispensable part of campus life, and to create a sustainable campus environment, our university has implemented measures such as source reduction, minimizing food waste, and establishing sustainable dining management standards to foster a low-carbon dining environment. In addition to encouraging faculty and students to bring their eco-friendly containers when purchasing food, the university has organized a series of "Green Dining" lectures to educate the campus community on how to reduce carbon emissions through food choices and adopt source-reduction strategies. The lectures promoted habits like buying in appropriate quantities and consuming food on a first-purchased, first-eaten basis to reduce food waste. Moreover, the university has offered "Carbon Reduction in Dining" courses for food service providers, advocating the use of seasonal and locally sourced ingredients to reduce carbon emissions from food transportation and encouraging the procurement of organically farmed products grown through environmentally friendly methods.

13

CLIMATE ACTION

2019-2023 Publications	146
2019-2023 Percentage of all Taiwan Publications	4.1%
Course Units	81
Student Engagements with Units on SDG 13	2,004

Research

Roadside Slope Disaster Information Integration and Assessment System

In response to the increasing likelihood of various disasters due to extreme weather conditions, Professor Meng-Chia Weng, Associate Professor Yu-Ping Yuan, and Associate Professor Wei-An Chao from our university's Department of Civil Engineering, along with a cross-disciplinary research team composed of members from National Taiwan University, National Taipei University of Technology, National United University, and Sinotech Engineering Consultants, have made significant breakthroughs in the analysis and prevention of rockfall disasters. They have developed the "Roadside Slope Disaster Information Integration and Assessment System," which provides solutions to the potential disaster losses caused by Taiwan's fractured geology and extreme weather conditions. This research outcome supports the Taiwan Area National Freeway Bureau, Second Maintenance Office, building the foundation for enhancing the nation's climate resilience. The study has also been published in the international journal *Engineering Geology*.

The Importance of Prosumers in Clean Energy Development

Achieving net-zero emissions is not solely the responsibility of power companies; it also requires the cooperation of the demand side. Prosumers play a crucial role in increasing the flexibility of energy dispatch, creating new business opportunities in the net-zero era. Professor Jin-Li Hu from our Institute of Business and Management explores the shared model of energy prosumers from a management and policy perspective. The research delves into the energy prosumers in various fields, identifying their main differences and their respective relationships with energy. The study recommends that prosumers be legally protected to prevent misuse by large, information-rich corporations, ensuring that the legitimate rights and interests of all market participants are safeguarded. This research has been published in the international journal *Energies*.

Social Impact

Establishing the American Taiwan Climate Club

In December 2023, our university signed a memorandum of cooperation with the American Climate Club to establish the American Taiwan Climate Club together. Both parties will work together to develop an internationally aligned carbon standard and propose an ESG (Environmental, Social, and Governance) policy white paper aimed at helping Taiwan gain greater influence on the international carbon trading stage and creating more development value for Taiwan's green economy. Additionally, the collaboration will focus on five key areas: climate and carbon credit education promotion, international networking, carbon project investment, carbon consultancy services, and policy research and think tank initiatives, working together towards advancing climate protection efforts.

Signing the "University Sustainable Development Initiative"

On August 15, 2023, in the presence of over 200 in-person and online faculty members and sustainability experts, Ambassador Eugene Chien, Chairman of the Taiwan Institute for Sustainable Energy (TAISE), and President Chi-Hung Lin of our university signed the "University Sustainable Development Initiative." This initiative signifies our university's commitment to "enhancing university governance," "exerting social influence," and "implementing environmental sustainability." Together with the Taiwan Institute for Sustainable Energy and universities nationwide, we are dedicated to pursuing sustainable development.

Education & Cultivation

Incorporating EO4SDG Concepts into Course Teaching and Practice

Remote sensing allows for large-scale, repetitive data collection, making it suitable for observing various surface phenomena, such as oceans, floods, forests, water resources, agriculture, and land use monitoring. EO4SDG (Earth Observation for SDG) is an initiative proposed by the Group on Earth Observations. Professor Tee-Ann Teo from our university's Department of Civil Engineering has incorporated the EO4SDG concept into his course, enabling students to apply remote sensing techniques in hands-on projects that explore issues related to water resources, sustainable urban and rural development, and terrestrial ecosystem conservation.

Students Establish ESG Sustainability Foresight Society

To concretely implement sustainability actions and foster mutual encouragement among peers, our university students have independently established the "ESG Sustainable Prospect Club." The club includes undergraduate and graduate students from various disciplines across our university and partner schools. The club's activities cover corporate ESG development and engage with sustainable startups, international B Corporations, and NGOs, empowering members to become future green talents and sustainability leaders. Under the active operation of the society, multiple lectures have been held, and a simulated global climate summit workshop was organized. Additionally, the club has collaborated with the Hsinchu City Environmental Protection Bureau and Ucup to promote the "Reusable Cup Plastic Reduction Project." They have also released the "Sustainability News Report" and the "Hsinchu City Vegetarian Map" on social media platforms, influencing thousands of participants in sustainability actions both on and off campus. The club aims to instill the spirit and literacy of sustainable development deeply within the campus, ultimately driving the world towards sustainability in future careers.

Stewardship

Enhancing Sustainability Literacy

To enhance the sustainability literacy of faculty, staff, and students and their understanding of climate change concepts, various units within our university organized numerous events in 2023. These included activities such as the SDGs Cross-Dormitory Puzzle Activity, the Green Dormitory Carbon Reduction Workshop, the classic general education lecture "Super Typhoons, Oceans, and Global Warming - My Adventure," the liberal arts lecture "Empowering Women in Technology and Achieving Net-Zero Carbon Emissions - We're All Involved," the "USR & SDG Achievements Exhibition and Workshop" and "SDG Webinar" organized by the Office of Social Responsibility and Sustainable Development, three "Sustainability Series Lectures" hosted by the Global Citizenship Education Center and the ESG Sustainability Foresight Society, the "A System Approach to Sustainability" lecture by Prof. Bernard Amadei invited by the College of Engineering, and the "Algorithmic Carbon Reduction Series Lectures" organized by the Institute of Science, Technology, and Society.

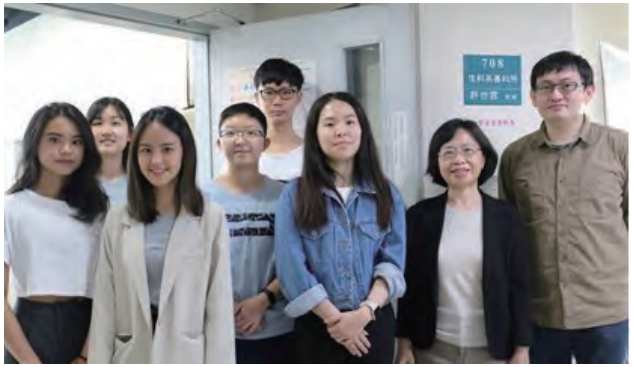
Creating a Climate-Friendly Campus

Our university is actively responding to sustainability and climate change issues, prioritizing energy conservation and carbon reduction as key objectives. In 2023, we installed smart streetlights managed through automated artificial intelligence systems. Over 1,200 streetlights across our Taipei and Hsinchu campuses can now be controlled based on the Central Weather Bureau's sunrise and sunset times, preventing the inconvenience and energy waste caused by lights turning on or off too early or late during seasonal changes. Additionally, air conditioning systems, which consume the most energy, have been optimized with energy-saving algorithms estimated to reduce energy consumption by 30%. Furthermore, in 2024, our university will launch a greenhouse gas inventory and verification program to identify emission hotspots. The analysis will uncover areas with potential for emission reductions, leading to the development and implementation of related carbon management strategies to achieve the goal of net-zero emissions by 2050.

14

LIFE BELOW WATER

2019-2023 Publications	49
2019-2023 Percentage of all Taiwan Publications	2.6%
Course Units	33
Student Engagements with Units on SDG 14	361



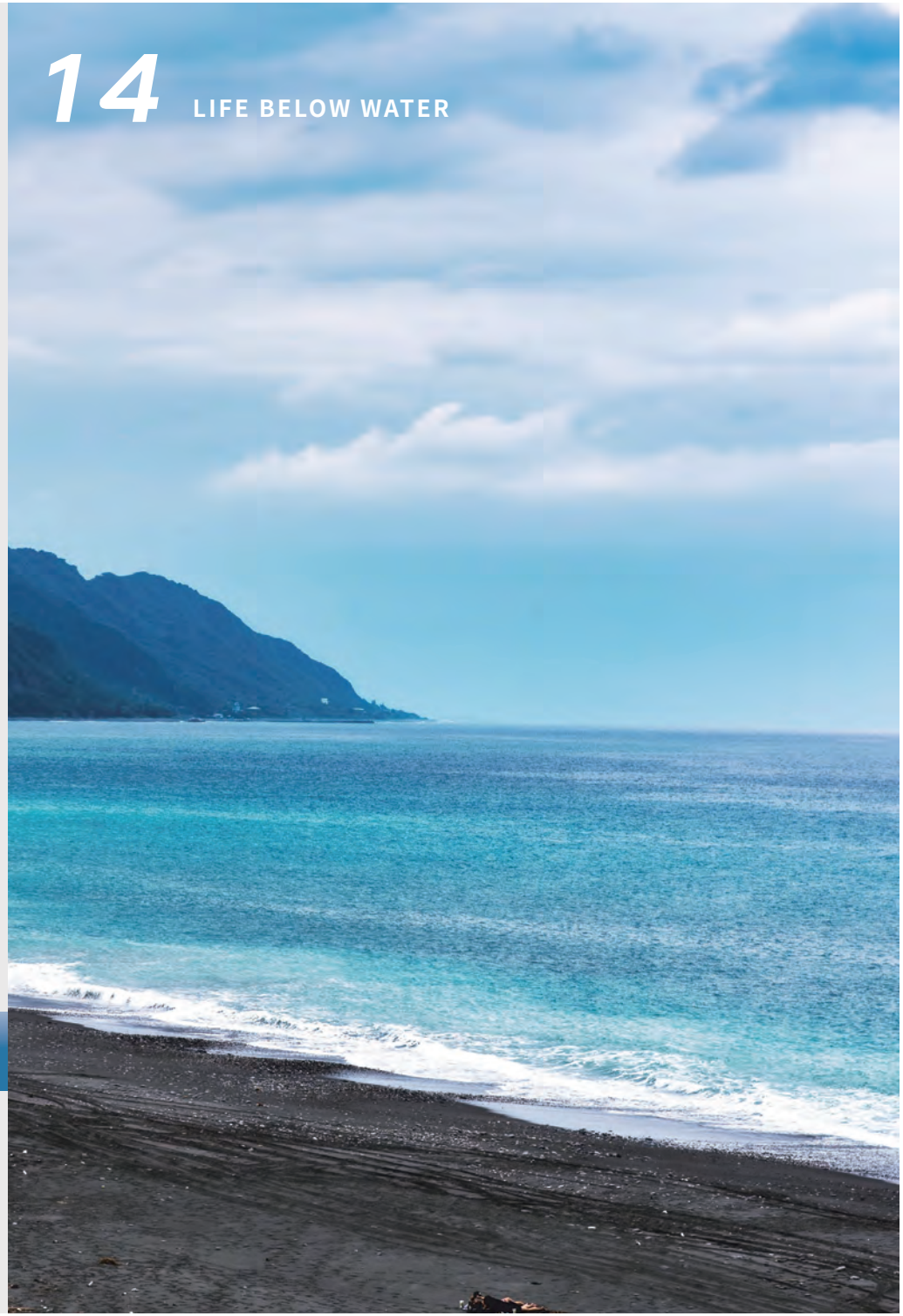
Research

Efficient and Energy-Saving Desalination Mechanism

Taiwan frequently faces water shortages due to the impact of extreme weather, and desalination of seawater is one potential solution. However, current mainstream desalination technologies require substantial electricity and equipment, making it difficult to achieve economies of scale. Professor Shih-Yi Hsu from the Department of Life Sciences and the Institute of Genomic Sciences at our university and her research team have utilized amyloid proteins to filter seawater. This method automatically guides water molecules and increases the hydrophilicity of nanomicrotubes, enhancing the efficiency of separating water molecules from salt ions. This approach can even achieve 100% desalination of seawater. The biomimetic nanomaterial's automatic transport mechanism contributes to the development of a high-yield, low-energy, and low-carbon desalination process. The related research findings have been published in the international journal *Small*.

Development of Maritime Risk Assessment Technology

As a hub for maritime traffic between Northeast and Southeast Asia, Taiwan is critical in the region's shipping routes. Although the Automatic Identification System (AIS) provides real-time information on vessels in the sea area, maritime accidents still frequently result in significant personal and property losses. To reduce the likelihood of such incidents, Professor Hsien-Kuo Chang and his research team from our university's Department of Civil Engineering collected historical data on past maritime accidents. They analyzed these incidents' categories and spatiotemporal distribution to understand the hotspots and risk factors better. After quantifying the risk factors, they established a preliminary risk assessment model for navigation around a specific major port. Additionally, the research team collected relevant applications and technical documents of the VHF Data Exchange System (VDES) from domestic and international sources, summarizing the benefits of VDES for maritime safety and communication. This information is provided for reference to domestic port management authorities.



Social Impact

Raising Public Awareness of Marine Environmental Protection

Our university's Department of Industrial Engineering and Management collaborated with the TTY Environmental Sustainability Foundation to organize a beach cleanup activity. The event took place at the Fish Scale Ladder in Nanliao, Hsinchu, and emphasized the concepts of sustainability and environmental protection. The initiative aimed to raise public awareness of the impact of garbage and pollutants on marine environments and ecosystems. During the event, students cleaned up trash and marine debris on the beach, contributing to protecting the marine environment and promoting public awareness and marine conservation actions.

Beach Cleanup Education and Practice

Our university’ s Service Learning Center organized beach cleanup lectures and activities, integrating marine education into the cleanup process. The aim was to make beach cleanups more than just trash collection but also a learning experience about marine environmental issues. Through these lectures, students and the public gained a deeper understanding of the importance of marine resource conservation. They took practical actions to care for the marine ecosystem, embodying the concepts of sustainability and environmental protection. With collective efforts, more than 900 kilograms of trash were removed, fulfilling the mission of marine environmental protection and inspiring societal concern and action for environmental issues, allowing for sustainable ecosystems.

14 LIFE BELOW WATER

Education & Cultivation

Series of Activities on Marine Issues

The Liberal Arts Academy at our university hosted a series of five activities under the theme "Living on the Island: Our Distance from the Sea," including two lectures, two field trips, and a workshop, attracting 341 participants. The themes of these events included:

- "Fake Real People Library: Two Fish Vendors, Three Lives": Fish vendors were invited to share their observations on marine sustainability and tips for sustainable seafood consumption, helping students better understand and respect marine workers while changing perceptions of the fish vendor's life.
- "Extreme Eastern Seaside: One-Day Experience of a Magang Village Female Diver": A field trip to the adjacent fishing villages of Mao'ao and Magang, where students visited "stone houses" that reflect local natural and cultural characteristics, learned to wear straw sandals with the female divers, and explored the tidal zone to understand algae and mollusks. The trip also delved into the issues of coastal development and village relocation.
- "Satoumi Action: How Can Fishing Villages Promote Marine Sustainability?": This event advocated for the Satoumi concept, aiming to balance production, life, and ecology. The current stage results and challenges of Satoumi projects were introduced, providing students with a new perspective on sustainability that combines economics and ecology.
- "The Sea Has a Tomorrow: Marine Issues Cafe x Future Design Workshop": Discussed three major marine issues: marine debris, marine energy development, and sustainable fisheries. The workshop used bycatch as material and applied future design methods to brainstorm creative solutions.
- "Summer Night Fishing Lights: Two-Day Experience of Sulfur Fire Fishing and Pulling Net Fishing Methods in Jinshan": Students boarded a boat to observe the sulfur fire fishing method and participated in the "pulling net" fishing method, which requires collective effort. This experience allowed students to feel the vitality of marine life and the wisdom of coastal residents living by the sea.

Stewardship

Ocean Talent Development Model

Our university's Department of Civil Engineering has implemented an innovative ocean talent cultivation plan driven by engineering projects. The department established the Hydrology and Ocean Engineering Program, offering a solid and broad knowledge base. The course topics include hydrology, hydraulic engineering, coastal processes, marine renewable energy, introduction to hydrological modeling, channel hydraulics, and more, providing a foundation for students pursuing research or careers in hydrology and ocean engineering. The department aims to cultivate talents that will contribute to the sustainable preservation of Taiwan's maritime resources while making tangible contributions to national land conservation and economic development.

15

LIFE ON LAND

2019-2023 Publications	31
2019-2023 Percentage of all Taiwan Publications	1.9%
Course Units	51
Student Engagements with Units on SDG 15	847

Research

Forest Landscape Planning Policy

Green spaces improve both physical and mental health, and the seasonal changes in greenery can alter the characteristics of forest landscapes. Professor Chun-Cheng Lin from the Department of Industrial Engineering and Management at our university and his research team adopted the Attention Restoration Theory (ART) to assess the psychological benefits of different forest landscape colors within Taiwan's renowned Aowanda National Forest Recreation Area. The research findings indicate that varying forest landscape colors impact attention restoration, landscape preferences, and the willingness to stay. Visitors preferred warmer-colored forest landscapes and were more inclined to spend more time in such environments. The study recommends that future national forest park planning and landscape design consider local climate change and environmental shifts by selecting tree species with seasonal foliage changes, such as bald cypress and sweetgum. Additionally, maintaining color consistency throughout the landscape is essential to enhancing the effects of environmental restoration. The research findings have been published in the international journal *Forest Policy and Economics*.

Relationship Between Slope Failure and Rainfall

Taiwan, an island nation near the subtropics, is prone to typhoons every summer. Professor Chia-Ming Lo from the Department of Civil Engineering at our university and his research team have conducted a study on rainfall infiltration-induced rock slope failures. Using the discrete element method (DEM) numerical software 3DEC developed by Itasca, they simulated the impact of rainfall infiltration on the stability of rock slopes. By coupling simulation results with inflow and outflow time curves, the study confirmed that their proposed method could, to a certain extent, simulate the continuous changes in slope failure caused by rainfall. This method can be a reference for future studies on modeling surface water infiltration-induced rock slope slides and changes in pore water pressure using discrete element simulation. The research findings have been published in the *Journal of Chinese Soil and Water Conservation*.

15 LIFE ON LAND

Social Impact

Participation in Trail Volunteer Action

Mountain trails offer an important way for people to connect with nature. The Fitipower Environment Foundation organized a two-day "Handmade Trail" initiative to promote the care and maintenance of these natural trails. The event rallied students from National Yang Ming Chiao Tung University and National Tsing Hua University, with participation from 6 departments and 2 student organizations, totaling 60 volunteers. These volunteers traveled to the Tea Pavilion Ancient Trail in Hengshan Township, Hsinchu, to serve as forest conservation volunteers. Under the guidance of the Taiwan Thousand Miles Trail Association, the volunteers used a "local sourcing" method to maintain the trail, utilizing fallen trees and scattered rocks from the area, thus avoiding using heavy machinery and external materials that might disturb the local environment. They worked on maintaining an 800-meter stretch of the Tea Pavilion Ancient Trail. The goal was to strengthen the volunteers' sense of sustainability through hands-on experience, fostering a mindset of coexisting with nature that extends into their daily lives and encourages continued positive influence.

Sustainable Urban Living with Chickens and Bats as Companions

Led by Professor Wen-Shu Lai from the Graduate Institute of Applied Arts, the "Six-Fuel" team was awarded the 2023 Good Design Award in Japan for their project "Sustainable Urban Living with Chickens and Bats as Companions." Since 2018, the team has been promoting the idea of considering chickens and bats as learning partners, integrating smart technology and ecological ethics to care for chicken coops and bat habitats. The project is centered on the concepts of non-human-centric sustainable living and ecological conservation education. During the annual visits of the Japanese pipistrelle bat, the team organizes a series of workshops, including bat observation, bat caretaking, bat rescue, and the construction of bat nest boxes. Additionally, activities such as bat monitoring and counting are carried out. These initiatives help surrounding residents and the university community develop a positive understanding of bats, promoting awareness and respect for diverse species.

15 LIFE ON LAND

Education & Cultivation

"Multi-Species Touqian River" Walking Tour Activity

In collaboration with the International Center for Cultural Studies, the Department of Humanities and Social Sciences at our university organized the "Multi-Species Touqian River" walking tour activity. Through two outdoor workshops, students were guided to get hands-on experience and explore the Touqian River. The first session, "Good Water in Hsinchu," focused on water issues in the Touqian River. Led by the president of the Taiwan Clean Water Action Alliance, participants followed the river from its upstream to downstream regions, gaining insights into the water-related challenges of the Touqian River basin. The second session, "Collecting Memories by the Riverbank," was a plant workshop led by the author and ecological illustrator of The River Without a Mouth. This workshop took students to the riverbed of the Touqian River, where they learned about the riverbank plants, their habitats, and the history of migration, understanding the river as a habitat for non-human species.

Environmental History and Multispecies Justice Workshop

In collaboration with the International Center for Cultural Studies, the Department of Humanities and Social Sciences at our university hosted the "Environmental History and Multispecies Justice Workshop." This event brought together researchers in environmental history and multispecies studies, aiming to move beyond the human-centered perspective typical of humanities and social research. It also sought to transcend the "human vs. single species" dichotomy often found in animal studies, instead exploring the entangled relationships between humans and non-humans and the modern power dynamics within food, agriculture, and the environment. The workshop's keynote topics included "How to Decolonize Death? Multispecies Justice Reflections on the Stray Dog Controversy" and "The Socio-Ecological Connections between Taiwan and Southeast Asia under Japanese Imperial Rice Trade."

Stewardship

Campus Tree and Habitat Health Inventory Project

Trees play a crucial role in the carbon cycle, and our university's Office of General Affairs is dedicated to properly maintaining and managing trees on campus to ensure their healthy growth and enhance carbon sequestration efficiency, supporting the goal of net-zero transition by 2050. The following initiatives are being implemented:

- Natural Ecological Environment Creation
  The university regularly assesses the current state of the campus environment. The Yangming campus, built on a hillside, features a largely natural forest landscape, with artificial elements like flower beds and lawns only present near buildings. The plants on the slopes help with water retention and soil conservation, creating a natural habitat that supports campus biodiversity. On the Chiao Tung campus, the eastern area consists of sloped terrain with campus roads running through, lined with artificially planted trees. The western part, adjacent to National Tsing Hua University, is a low-density development with areas of natural secondary forest that fall within the environmental impact assessment zone.
- Tree Maintenance and Management
  Twice a year, large-scale pruning of shrubs (e.g., Ficus microcarpa) and designated trees is carried out. In addition, safety measures and emergency response plans are in place to handle tree hazards or falls caused by typhoons, heavy rain, strong winds, or unexpected tree collapses to ensure road accessibility and the safety of faculty and students. Monthly inspections of campus trees are conducted to monitor conditions such as hazardous dead branches, obstructed streetlights, and signs of pests or diseases. Immediate pruning and preventive measures are taken as needed to address these issues.

16

PEACE, JUSTICE AND STRONG INSTITUTIONS

2019-2023 Publications	82
2019-2023 Percentage of all Taiwan Publications	6%
Course Units	415
Student Engagements with Units on SDG 16	7,236

Research

Tech Governance from an Asian Perspective

To promote legal research on technology from an Asian perspective, the School of Law at this institution organized the "2023 Asian Law Schools Association (ALSA) Conference." Over 100 scholars from more than 20 countries gathered to discuss how to address the societal impacts of current technological innovations. The conference covered key contemporary issues, including human-robot interaction, trustworthy AI, virtual currencies, internet governance, automated technology governance, data sharing and governance, AI applications in the judiciary, digital platforms, intellectual property innovation, digital labor rights, geopolitics, biomedical innovation technologies, digital technology and global health law, and AI-enabled legal education reforms. Through this interdisciplinary exchange in technology law, the conference aims to accelerate the formation of a technology law community with an Asian identity, shaping legal policies from an Asian perspective to respond to the industrial impacts and social changes of technological innovation.

The Identification and Human Rights Issues of Tibetan Refugees

The International Center for Cultural Studies' "Migration, Inequality, and Critical Legal Studies" team is organizing a workshop in collaboration with the Department of Humanities and Social Sciences at this university. This workshop will focus on the legal cases of Tibetan refugees in Taiwan who have filed lawsuits against the Taiwanese government. The event will bring together legal professionals, representatives from NGOs assisting with these cases, members of Taiwan's National Human Rights Commission, and Tibetans living in Taiwan to discuss issues such as the aspects of refugee life, citizenship diversity, and human rights concerns. The workshop aims to highlight the limitations of Taiwan's current legal framework regarding refugee adjudication and explore how these cases can help promote greater protection of refugee rights in Taiwan, moving towards laws and policies that better align with international human rights standards.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Social Impact

Global Health Law and Governance

In August 2023, the School of Law and Technology at this university signed a memorandum of understanding with the O'Neill Institute at Georgetown University, USA, to establish a dual master's degree program. This program allows students to pursue a Master of Laws (LL.M.) in Global Health Law and Governance at Georgetown University Law Center. After obtaining the master's degree, students may also have the opportunity to intern at the O'Neill Institute. The O'Neill Institute is a leading public health law research institution in the United States, primarily commissioned by governments and international organizations to conduct research and policy planning on health and public health regulations. The establishment of this dual degree program aims to deepen the development of the "Biomedical Law Group" and public health law policy research while facilitating talent exchange with top international research centers in this field.

Promoting the Destigmatization of Mental Illness

In recent years, the number of individuals with mental health-related illnesses has been on the rise. In response, the university's "Crusaders Mental Health Service Team" has been promoting a "destigmatization" campaign on campus. Through events such as Mental Health Awareness Week exhibitions and lectures, the campaign aims to educate students about mental illness and foster understanding of the challenges faced by individuals with mental health conditions, thereby promoting the destigmatization of mental illness. Additionally, the service team conducted a nine-day service trip to Kaohsiung Municipal Kai-Syuan Psychiatric Hospital, where they led activities for individuals from the hospital's community rehabilitation center, long-term care center, and Castle Rehabilitation Home. By organizing custom-designed short plays, the team helped participants feel social care and encouragement, empowering them to view their conditions in a more positive and proactive light.

Education & Cultivation

Fostering Humanitarian Spirit in Students

The university's Liberal Arts College offers a course titled "International Relations through the Lens of the Taiwan Strait Example," which develops along the axis of a century of national history and incorporates real-life interactions between Taiwan and mainland China. The instructors are scholars with experience in military, historical, and diplomatic practices. The course invited a former U-2 pilot from the ROC Air Force's 35th Black Cat Squadron, who conducted high-altitude reconnaissance during the Cold War, to share firsthand insights on cross-strait history and war practices. Additionally, the Liberal Arts College produced a video titled "Analyzing the Russia-Ukraine War from a Liberal Arts Perspective: National Security and Defense Strategy Analysis," which delves into the current international situation and wartime decision-making, with an in-depth exploration of the relationship between "battle guidance" and "endgame guidance." The course aims to enhance students' understanding of national interests and values in international relations, fostering systematic thinking and deepening their knowledge in areas such as "international relations," "cross-strait relations," and "historical humanities."

Service Learning Courses

The university's Service Learning Center has implemented a system for service learning courses, combining service and learning through experiential education. With structured course designs, the center promotes a "learning by doing" philosophy, integrating professional knowledge with public service. The goal is to encourage faculty and students to address social needs by applying their knowledge and taking action to promote social participation, thereby achieving a win-win outcome with partner organizations. To implement the service-learning course system, the university has established regulations that require all freshmen enrolling from the 2023 academic year to take service-learning courses. In addition to offering relevant learning and teaching resources, the Service Learning Center regularly holds faculty development workshops and service learning lecture series. Following the pandemic, the center has also resumed overseas service-learning programs, recruiting students to participate in international volunteer service projects.

Stewardship

Student Dormitory Self-Governance Organization

To better cater to the needs of dormitory residents, the university encourages students to participate in dormitory affairs management through monthly resident meetings. The residents elect the dormitory self-governance officers, who directly participate in the dormitory management committee, revising dormitory regulations and making important decisions. The system fosters the concepts of self-governance and democratic law. The management unit holds monthly resident meetings, inviting all dormitory students to attend. During these meetings, residents discuss and vote on dormitory affairs, track dormitory maintenance and cleanliness issues, and promote key dormitory matters. Additionally, to ensure thorough communication with students, the management unit holds public hearings in collaboration with dormitory officers and the student council before implementing significant dormitory policies to help gather resident opinions, facilitating two-way communication between the university and students and allowing for policy adjustments based on actual needs and suggestions.

Promoting Indigenous Education

To actively build a cultural support system for Indigenous students' academic and campus life and to promote a friendly environment for different ethnic groups, the university established the Indigenous Student Resource Center. The center offers support in various areas, including life assistance, academic and career counseling, employment guidance, and cultural education activities for Indigenous students. In addition to providing daily companionship and guidance, the university continuously improves its support measures, offering information on scholarships and integrating its "Program to Enhance Higher Education Public Accessibility and Assistance." This program encourages students to learn their Indigenous languages, offering financial support as they take on the responsibility of language preservation. Furthermore, the university actively organizes activities and courses related to Indigenous education. Events such as Indigenous Culture Week, orientation camps, community service, and traditional food and craft courses aim to increase awareness and understanding of Indigenous culture among faculty and students, fostering respect and care for different ethnic groups and creating a culturally friendly campus environment.

Research

Taiwan-Japan Collaboration Accelerates R&D of Cutting-Edge Technologies

To promote more opportunities for advanced technology development and talent exchange between Taiwan and Japan, our university signed a memorandum of understanding (MOU) with the Industrial Technology Research Institute (ITRI) and Kyushu University, focusing on three major areas: semiconductors, smart vehicles, and green energy. The collaboration aims to develop the necessary cutting-edge technologies and methods for talent exchange. Both sides will better understand each other's needs and technological advantages through industry-academia-research exchanges, cultivating the professional skills and talent required in key fields. Additionally, our university has established the Taiwan-Japan Exchanges Office to foster various academic exchanges between Taiwan and Japan and to promote collaboration between our university and the semiconductor industry in the Kyushu region of Japan.

Launching Taiwan-US International Medical Collaboration

The Cancer and Immunology Research Center at our university, in partnership with Brigham and Women’ s Hospital (BWH), the second-largest clinical teaching hospital of Harvard Medical School, and the Immunology Research Center at Taiwan’ s National Health Research Institutes (NHRI), have jointly signed a memorandum of understanding. This collaboration promotes medical cooperation and substantive exchanges between Taiwan and the United States, enhancing medical and health cooperation. The collaboration includes academic exchanges for researchers and students, professional talent cultivation, joint lectures or seminars to deepen scientific research cooperation and promote collaborative research projects to facilitate international academic exchanges.

17 PARTNERSHIPS FOR THE GOALS

Social Impact

Advancing Open Education in Sync with Global Trends

The Open Education Consortium (OEC) is an international leader in promoting open education, with over 250 members from more than 150 countries/regions. Our university is the first in Taiwan to join the consortium. We have long been committed to open education, establishing the Taiwan Open Course and Education Consortium (TOCEC) to assist in the promotion of international open education. Following global trends in open education, we actively develop Open Education Resources (OER). In 2023, our provost led a delegation from Taiwan to participate in the "2023 Global Open Education Conference" organized by OEC. The conference theme was "Building a Sustainable World Through Open Education." Through this participation, we introduced Taiwan's open education initiatives to the world and brought international experiences back to Taiwan, further enhancing the diversity of open education development in Taiwan.

Successfully Bringing the Harvard World Model United Nations to Taiwan

Students from our university's Arete Honors Program successfully secured the hosting of the 2024 Harvard World Model United Nations (WorldMUN) in Taiwan. Since its establishment in 1992, Harvard WorldMUN has traveled to 30 cities worldwide, attracting over 110 countries and accumulating participation from 30,000 students. This event is a vital educational activity for developing critical thinking, independent thinking, and global competence. Students will role-play as diplomats from various countries to discuss international issues, focusing on topics such as international security, economics and finance, social humanitarianism, and legal matters closely aligned with the Sustainable Development Goals (SDGs). They will debate and express their views on different issues through simulating multilateral diplomacy, reflecting their passion for international affairs and global issues.

17 PARTNERSHIPS FOR THE GOALS

Education & Cultivation

Cultivating Global Public Health Professionals

Our university's International Health Master's Program, established in 2002, is Taiwan's first all-English program in the field of public health. It enables local and international students from around the world to study together, broadening their global perspectives and serving as Taiwan’ s best platform for promoting healthcare internationally. The program aims to cultivate global public health professionals, combining health policy, infectious diseases, immunology, and public health. It focuses on public health issues in developing countries and vulnerable communities, using research, education, and international cooperation to understand and address global health challenges.

Southeast Asia Semiconductor Talent Development

Our university has partnered with the global semiconductor leader TSMC to establish the "Yang Ming Chiao Tung University x TSMC Southeast Asia Semiconductor Talent Development Scholarship." This scholarship aims to encourage Southeast Asian students to apply for semiconductor-related master's degrees at our university, thereby expanding the talent pool in the semiconductor industry. Graduates from universities such as the University of Malaya, National University of Malaysia, Universiti Sains Malaysia, Universiti Teknologi Malaysia, Hanoi University in Vietnam, Bandung Institute of Technology in Indonesia, National University of Singapore, and Nanyang Technological University are eligible to apply for this scholarship. A shortage of engineering and technical talent is one of the biggest challenges facing Malaysia's semiconductor industry. We will continue to focus on recruiting Malaysian students and enhancing their academic and professional skills, ensuring graduates are well-equipped to work in top-tier semiconductor companies globally.

Stewardship

Deepening International Exchange

Our university places great importance on internationalization, actively expanding opportunities for exchange with overseas higher education institutions. The diverse international exchange activities include faculty and student exchanges, international academic conferences, guest professorships, student exchange programs, short-term study programs, overseas internships, and various volunteer activities. The exchange network spans Africa, Central and South America, Asia-Pacific, Middle East, North America, and Europe, with partnerships established with over 300 academic institutions in 48 countries. In addition to continuing to focus on academic exchange activities, we will strive to strengthen international resources, collaborate on international exchange projects with industry, government, and academia, send outstanding students abroad for internships, collaborate on dual-degree programs with sister universities, develop comprehensive international student support programs, and establish an all-English international college to attract foreign students, moving towards becoming a distinctive international university.

In order to encourage those who related to sustainable development issues in NYCU, Center for Institutional Research and Data Analytics compiled the “Sustainable Development Annual Report”，which includes the results and highlights of 17 SDGs from our campus in 2024. We hope this motion can serve as a stimulus in attracting more school members to join the sustainable actions and research.

If you have any action plans about SDGs (education plans or research projects) over the last two years, we welcome you to email the achievement to us with the forms like articles, images or videos. Upon review by our dedicated staff, it will be posted on NYCU SDGs website (https://sdgs.nycu.edu.tw/), and may also be the materials for the “2025 Sustainable Development Annual Report”

Thank you for your attention on NYCU SDGs!

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