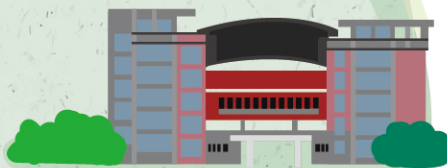國立高雄大學
National University of Kaohsiung

National University of Kaohsiung
Sustainability Report 2022

Content

About This Report

This sustainability report was published by National University of Kaohsiung (hereinafter referred to as NUK) for the stakeholders to understand its performance in the four aspects of operations: institutional management, teaching and learning, campus environment and social inclusion. It presents the topics of the University sustainability and its social responsibility, and how the University responds and acts while identifying, analyzing and disclosing significant topics.

The Basis of the Report

The structure of this report mainly follows the GRI Standards guidelines published by the Global Reporting Initiative (GRI) in 2021. It follows the disclosure of the core option and the three principles of inclusivity, materiality, and responsiveness to compile and disclose data of the report.

The Boundary for Data Collecting

The boundaries for data collecting are limited to the university campus, comprising governance, faculty and staff, students, environment and society.

Time Span of the Report

The content of this report spans from January 1, 2022 to December 31, 2022 according to the type of data acquired: the information of faculty and students spanning from the academic year of 2021 and the first semester of 2022; the information of operational activities from August 1, 2021 to February 29, 2023, some dated from recent one to three academic years or from one to three years. When the mentioned qualitative or quantitative data is not available or with certain significance, footnotes are added.

Review of the Report

This report was reviewed by the independent third party, British Standards Institution (BSI) in June 2022 in compliance with the core options and review standards of GRI Standards 2016. The BSI certificate is enclosed in the appendix.

Report Cycle

This annual report of sustainability was first published in July 2019. The next Chinese version will be published in July 2024.

Contact us

If you have any suggestions or comments about the report, please contact us.

國立高雄大學
National University of Kaohsiung

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The President's Statement

National University of Kaohsiung, founded in 2000, is the only newly set-up national comprehensive university in Taiwan at the very beginning of the twenty-first century. The University consists of five colleges, twenty-one departments, twenty-two master's programs and three doctoral programs. Our mission is to balance the development of higher education in southern and northern Taiwan, and to launch Kaohsiung on to the world stage and pursue excellence. It complies with the government's industrial policies: to launch a hi-tech corridor in southern Taiwan; to meet the demands of emerging industries; to assist upgrading and transforming local traditional industries in Kaohsiung area; to supply technical and managerial personnel for the global deployment and operations of Taiwanese enterprises.

The University recognizes, as an innovative university of the twenty-first century, the importance of our social obligations. In addition to our focus on the integration of teaching and research, humanities and science, and cooperation with industry, government, and other universities, it aims at building a university community in the surrounding area, constructing green space, empowering civic development, enhancing community quality, and promoting culture in Kaohsiung. After consistent efforts, the University was the first to sign the Talloires Declaration on June 5, 2004, and designated as the first Green University in Taiwan. In 2009, the University was awarded the title "Model Green University" by the Ministry of Education; in 2010, it was awarded the first place in the university category for Promoting Environmental Protection; in 2011, it was awarded the second place in the university category for "Water Conservation Contest 2011"; in 2014, it was awarded for excellence in the university category by the Water Resources Agency, Ministry of Economic Affairs for "Water Conservation Contest 2014"; in 2017, it was given the rank of Excellence by the Ministry of Education for "University and Colleges Health Promotion Projects 2016"; in 2019, it won the Gold Award of 2019TCSA Corporate Sustainability Reports in sustainability report category, and Judge's Award in National Sustainability Development Award of the Executive Yuan in the education category; in 2020, it won Gold Award of 2020TCSA Corporate Sustainability Reports in university category.

This University envisions itself to be an institution of special features with international prestige, to integrate teaching and research with industrial development, to emphasize humanistic culture and technological innovation and to cultivate talents. It hopes to transform the traditional style of education in order to provide faculty-staff and students with a free and creative climate, well-equipped teaching and research facilities, and high-quality learning environment. Along these lines, students will enhance learning capacity and faculty-staff will boost productivity. In order to achieve these goals, the University is pledged to its core idea to pursue change and transformation as strengthening services to the local community and public in higher education. To promote its international prestige, the University embraces Sustainable Development Goal (SDGs), adopting Glocalization as its core DNA. At the same time, it seeks international partners for cooperation and interpretation of SDGs strategy.

Thus, in its latest version of the mid and long-term plans for school affairs, the University has adopted SDGs-Inside as core guiding principle for actions. Based on Green University of the Talloires Declaration, this University will cooperate internationally with those participating in SDGs sustainable development topics, adopt "SDGs-Inside" as a language to connect with the international community, become a model for Southeast Asian universities to interface with European and American universities, and create an international link and a key carrier for the development of universities with special features.

Through these endeavors, the University is recognized in the University Impact Rankings by Times Higher Education (THE), UK in 2019. This is the first of its kind to assess universities on the basis of the United Nations' 17 Sustainable Development Goals. The University participated in the assessment of 551 universities from 80 countries around the world, and was ranked 201-300, matching SDG 8 "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all", it is ranked 72; for SDG 11 "Make cities and human settlements inclusive, safe, resilient and sustainable", 94. THE's University Impact Rankings reveals that the global assessment of university impact is no longer restricted to academic performance. The greater trend is to consider the broader impact that universities create. SDGs are becoming the common measure to evaluate the impact universities have on society, environment, and their partnerships.

National University of Kaohsiung, the youngest national university in Taiwan, is determined to pursue excellence, while daring to innovate and change, and implement Sustainable Development Goals. This University believes the spirit of substantiality is to act and not to copy. We believe each and every university has its own unique features. Whatever the features or styles are, action is the key to success for a sustainable campus. Our endeavors are a continual test for the future of sustainability in Taiwan.

Acting principal *Yueh-Juan Chen*

Dr. Yue-duan Chen
President of National University of Kaohsiung

NUK Achievements

1. Recognized in the University Impact Rankings by Times Higher Education (THE) :

   (1) For SDG 12 (Responsible Consumption and Production), NUK has been ranked among the top 200 universities in the world, and is ranked 4th in the country and first in the Kaohsiung-Pingtung region.

   (2) For SDG 11 (Sustainable Cities) and SDG 16 (Peace and Justice System), NUK was ranked among the top 5 universities from Taiwan, and both ranked the top in the Kaohsiung-Pingtung region. In addition, SDG 7 (Affordable and Clean Energy), NUK was ranked 7th among all universities in Taiwan, indeed an outstanding performance.

2. Feb. 2022 Silver Award of TCSA Corporate Sustainability Reports in Sustainability.

3. The Students Activity Center won the Green Building Label and EEWH.

4. Ranked the most favorable by enterprises among the mid-sized public universities in the survey by Cheers Magazine.

Sustainability Performance Table

National University of Kaohsiung (hereafter NUK) implements the SDGs-Inside concept and strives to integrate the various aspects of school development, teaching, industry-academic cooperation, and academic research.

1. In terms of school development : SDGs4 education quality, SDGs17 global partnership, SDGs9 industry, and innovation infrastructure are the top three priorities.

2. In terms of industrial-academic cooperation : the faculty of the Engineering College submits the most cases related to SDGs9 industrial and innovation infrastructure, and the faculty of the Humanities and Social Science College comes in second related to SDGs3 health and welfare.

3. In respect of National Science Council projects : the faculty of Engineering School submits the highest number related to SDGs9 industry and innovation infrastructure, and the faculty of Management School comes in second related to SDGs8 employment and economic growth.

Teaching & Learning

1. Establish the first XR School to cultivate somatosensory technology talents.
2. Dept. of Athletic Performance set up Football Section, and PE Office established a football team to cultivate college football talents.
3. Establish EDU Power Certificate in connection with ASE Cultural & Educational Foundation to care for the elementary schools in remote area and to implement ESG.
4. In response to the 108 Curriculum, organize a team of science teachers with specialties, and form an alliance with 30 senior high schools in the Kaohsiung area.
5. Assist local senior high schools and Renda Industrial Zone to promote petrochemical industry specialized classes to promote local education and employment.
6. "Introduction to Light-Emitting Diode Technology" and "Semiconductor Photolithography Process" passed the iCAP quality certification of the Ministry of Labor.
7. Cultivate highly professional talents of Japanese in law, and the average salary of graduates is higher than that of employed lawyers.
8. The ratio of faculty who applied for Teaching Practice Research Program of the Ministry of Education to participate in innovative teaching increased from 18.75% in 2018 to 50.59% in 2022.
9. The number of innovative courses offered by IF School has doubled, and the number of students taking the courses has increased by more than 2.5 folds.
10. Adopt 5 measure to help economically and culturally underprivileged students; the applications for student aids have increased by 3 folds.
11. Amend the measures of "Certificate Incentive Fund" to encourage economically and culturally underprivileged students to obtain certificates.
12. In 2022, more than 50% of the economically and culturally underprivileged students passed their major professional certificate and cross-field certificate.

Research & Industry-Academia

1. Promote the "Resilient City" social practice program, support Kaohsiung City Government to conduct scientific research on disaster prevention and rescue, integrate resources to guide the community in autonomous disaster prevention, and create a resilient community.
2. Implemented three cooperation projects with the National University System of Taiwan: "Integrated Interdisciplinary Research on Sustainability", "Seminars in Special-Featured Fields", and "Student Laboratory Exchange".
3. In 2022, 4 new University-level cooperation memorandums were signed with the industry, and the total number of memorandums reached 25, and the total amount of industry-university cooperation projects reached over the total sum of $100 million.
4. Combining incubation and entrepreneurial resources, NUK has cultivated 3 new campus innovation teams that participated in the three innovation competitions and won favorable results.
5. Based on the expertise of different programs to establish forward-looking research and development teams, including Artificial Intelligence Research Center, Disaster Prevention Research Center, Health and Bionic Technology Research Center, Advanced Structure Integration Technology Center, Sustainable Living Environmental Technology Center, and Digital Content Design Research Center.
6. Link external fields and community learning to establish a platform for linking local issues, support 4 USR Hub projects, and incubate emerging USR teams through competitive seed projects.
7. NUK won the honor of industry-academic cooperation outstanding unit issued by the Chinese Institute of Engineers in 2022.

8. The research team of Professor He Wenfu from Department of Chemical Materials won the 19th "National Innovation Award - Academic Research Innovation Category".

9. Prof. Zhong Yizhang from the Department of Chemical Materials, Prof. Hong Zongbei from the Department of Computer Science & Information Engineering, Prof. Wu Zhihong from the Department of Electrical Engineering, and Prof. Yu Zhaoqiu from the Department of Civil and Environment Engineering were awarded "2022 Future Science and Technology Award" by the National Council of Science and Technology.

Campus Facilities & Environment

1. More than 200 U-BIKEs at 10 stations have been installed on campus to reinforce the policy of zero-emission vehicles on campus.

2. The Student Activity Center was completed in 2022 and won the Green Building Label, Smart Building Label, and the Gold Award for Urban Engineering Quality.

3. The achievement rate of green procurement is over 99%.

4. Complete the replacement and update of wireless network equipment and Netcom information equipment in the buildings of the Science College and the Management College.

5. Establish a school-wide vulnerability management platform to effectively manage the distribution and repair of weaknesses in the information systems of all units in the school.

6. Complete the school-wide introduction of the information security management system.

7. Complete the expansion of the green energy in the Library, provide centralized management of the school-wide information and communication system for every office, and achieve the goal of energy conservation and carbon reduction on campus.

International Links

1. The number of international sister schools reaches 350, including 309 in Asia, 21 in Europe, 17 in America and 3 in Oceania, and NUK has signed joint dual-degree with 7 sister schools, with a total of 12 double-joint degrees.

2. Establish a Medan office to increase the number of sister schools and Indonesian students, and develop opportunities for local internships, study abroad and exchanges.

3. The establishment of the Asia Virtual Academy has opened up a new model of academic exchange that is transnational, cross-cultural, and cross-field in the post-pandemic era.

4. NUK organized the International Youth Sustainable Leadership Camp, held SDGs creative proposal competitions with Indonesian, Indian and National Philippine University and National University System of Taiwan, and produced 22 proposals.

5. NUK has cooperated with International Climate Development Institute (ICDI) to hold Climate Action Sustainability Special Exhibition, and presented the results in Belmont ABRESO, Sustainable City Forum, Campus Environmental Education, Resilient City, and Climate Sustainability Courses.school-wide information and communication system for every office, and achieve the goal of energy conservation and carbon reduction on campus.

Organizations & Administration

1. NUK won three gold and one silver awards in sustainability report category in Taiwan Sustainable Investment Forum for four consecutive years from 2019 to 2022.

2. In THE Impact Rankings 2022, our performance in SDG 12 (Responsible Consumption and Production) ranks the first among universities in Kaohsiung and Pin-tung area.

3. NUK is ranked the most favorable by enterprises among the mid-sized public universities in the survey by Cheers.

4. In response to the policy of Taiwan Net Zero Emissions 2050, NUK has planned 6 aspects of action: Green University, Campus Carbon Neutrality, Low Carbon Transportation, Green Building, Zero Waste Low Carbon Diet, and Citizen Participation. The general direction, and joined hands with the NUK has also worked with ICDI to hold Climate Action Sustainability Exhibition to showcase the cooperation results.

5. The amount of funds raised for underprivileged students reached $1,656,000, an increase of 52% over the previous year.

Sustainability Performance Table of Each College

NUK's 2022 curriculum corresponds to the distribution of SDGs indicators. Among them, the College of Humanities and Social Science uses SDGs5 for gender equality, the College of Law uses SDGs16 for peace and justice systems, the College of Management uses SDGs8 for employment and economic growth, the College of Science uses SDGs4 for education quality, and the College of Engineering uses SDGs9 for industry, innovation infrastructure construction for the highest relevance.

▼ Curriculum & SDG-Inside Action

▲ Academic Research & SDG-Inside Action

▲ Industry-Academic Cooperation & SDG-Inside Action

• SDGs-Inside Action with 2022 as inventory range

• Academic research referred to faculty's NSC projects

1.1 History and Organization

1.1.1 History

National University of Kaohsiung (hereafter NUK) was established, in compliance with government industrial development policy, to launch Asia-Pacific Regional Operations Center including the Southern Taiwan Science Park, Kaohsiung Multifunctional Commerce and Trade Park and International Logistics Center, and to assist industry upgrading and cultivating technology and management talents. NUK was approved by the Executive Yuan to establish a Preparatory Office in May 1997, officially founded at 700 Kaohsiung University Road, Nan-zi District, Kaohsiung on February 1, 2000, and began recruiting the first class of students in August, 2000.

Vision
A university of special features with international prestige.

Positionin
Combine teaching and research with industrial development. Emphasize on humanistic culture and sci-tech innovations. An excellent university that cultivates elite and talents.

1997
- The Executive Yuan approved the founding a Preparatory Office of NUK. Director of the Preparatory Office Ren-hong Wang began his directorship on June 11. A conference room on the 5th floor of Administrative Building of Kaohsiung Municipal Chuang-Shan Senior High School on loan to the Preparatory Office began operations, and the 2nd Conference Room was used as Preparatory Office on June 13.
- Vice President, also Premier of the Executive Yuan, Mr. Chan Lian presided at the opening ceremony of the Preparatory Office on July 22.

1998
- The construction of the First General Building was completed.

1999
- The Ministry of Education (hereafter MOE) approved the establishment of the Depts of Western Languages and Literature, Law, Applied Economics, Applied Mathematics and Electrical Engineering on September 29. MOE approved the establishment of the Dept of Government and Law on October 2.

2000
- Vice President, Mr. Chan Lian attended NUK's founding ceremony on February 1. Prof. Ren-hong Wang served as the first NUK president.
- The construction of the First Student Dormitory was completed.

2001
- The construction of the First Science and Engineering Experiment Building presently the College of Engineering Building was completed and began operating.
- MOE approved the establishment of the Depts of Kinesiology, Health and Leisure Studies, Economic and Financial Law, Asia-Pacific Industrial and Business Management, Life Science, Applied Chemistry, and Civil and Environmental Engineering.

2002
- The construction of the Second Science and Engineering Experiment Building (presently the College of Science) was completed and began operating.
- MOE approved the establishment of the Depts of Finance, Information Management and Applied Physics, and the Dept of Indigenous Art.

2003
- MOE approved the establishment of the Graduate School of Statistics, and the Depts of Chemical and Materials Engineering.

2004
- The construction of the Kinesiology, Health and Leisure Building & the College of Law Building were completed and began operating. MOE approved the establishment of the Dept of Computer Science and Information Engineering.
- Prof. Ying-Chung Huang from of Asia-Pacific Industrial and Business Management, School of Management began serving as the second NUK president on September 1.

2006
- The construction of the College of Management Building was completed and began operating. The Dept of Indigenous Art changed to the Dept of Traditional Craft and Creative Design.

2008
- Prof. Ying-Chung Huang, Dept of Asia-Pacific Industrial and Business Management, School of Management began serving as the second NUK president.
- MOE approved the establishment of the Dept of East Asian Languages and Literature.

2011
- The Ecological Pond on campus was declared as ""Wetlands of National Importance" by the Ministry of Internal Affairs.
- The construction of Hong Sze-Chuen Sports Dome (covered sports field) was completed and began operating.

2012
- Prof. Zhao-rui Huang from National Cheng-kung University served as the fourth NUK president.
- The construction of the College of Humanities and Social Sciences Building was completed and began operating. MOE approved the establishment of the Dept of Athletic Performance.
- The Dept of Traditional Craft and Creative Design, the College of Humanities and Social Sciences and Graduate Program of Urban Development and Architecture, the College of Engineering were merged into the Dept of Creative Design and Architecture.

2014
- The construction of Administration Building was completed and began operating

2015
- The construction of the Second Student Dormitory was completed.
- NUK was awarded the Teaching Excellence Project by MOE.

2016
- Prof. Xue-liang Wang from Info Management Dept, the Management College served as the fifth NUK president.

2017
- The Center for Southeast Asian Development and Research was founded.
- Architecture Section of The Dept of Creative Design and Architecture changed to the Dept of Architecture; Creative Design Section to Dept of Craft & Creative Design

2018
- The NUK Office in Medan, Indonesia and Philippines Learning Commons at NUK were founded.
- NUK was designated to hold National Intercollegiate Athletic Games 2010 by MOE.
- NUK was awarded Sprout Program for Higher Education, first 5-year term (2018-2022).

2019
- NUK was ranked 56 in "The Best Millennial Universities 2019", Times Higher Education, UK. The only national university in Taiwan to be listed.
- Ranked 301-350 in Asia in "QS World University Rankings" 2020.

2020
- Ms. Xiao-wen Tian, Athletic Performance Dept, won third place in Individual Competition, Para Table Tennis, Spain.
- Prof. Bao-diao Zhuang, Dept of Asia-Pacific Industrial and Business Management, School of Management, acted as Deputy President.
- The National Intercollegiate Athletic Games 2020 was held in NUK. Vice President Dr. Ching-te Lai, Minister of MOE, Mr. Wen-zhong Pan, Director of Sports Administration Bureau, MOE, Mr. Shao-xi Zhang attended the event.
- Prof. Yue-duan Chen, Dept of Financial and Economical Law, the School of Law, began serving as the sixth NUK president.

2021
- Signed a memorandum of cooperation with the Kaohsiung Management Office of the Farmland and Water Resources Department of the Agriculture Committee of the Executive Yuan, and inaugurated the Mingcheng Branch of "Continuing Education Center" to jointly promote continuing education
- Tian Xiao-wen, Athletic Performance Dept, won Bronze Medal in Individual Competition (TT10), Para Table Tennis, Tokyo, 2020.

2022
- Celebrations of the 22nd Founder's Day and Sports Day: holding the opening ceremony of the Student Activity Center, inviting distinguished guests to witness the signing of the MOU with Chunghwa Post, jointly promoting the "SDGs + ESG Specific Action Plan"; in order to show appreciation of the generous donations from alumni and all walks of life, an art installation was placed in the atrium on the 2nd floor of the Library Building.
- President Yueduan Chen led the distinguished guests and school supervisors to sign the 2050 Net Zero Carbon Emission Declaration and inaugurate the Hong Sze-Chuen Arts and Culture Foundation in accordance with the national 2050 Zero Carbon Emission Policy, focusing on six major directions: green university, campus carbon neutral, low-carbon transportation, green building, zero-waste low-carbon diet, and civic participation. The ceremony was held to thank the Foundation for its donation in building Arts and Culture Section in the Student Activity Center.
- The construction of the Students Activity Center won Smart Building, Green Building Label and the Urban Engineering Quality Gold Award.

2000

NUK founded

2004

Signed the **Talloires Declaration**

2009

Domonstration school for Green University

2011

5 hectares of wetland designated as local wetland

2019

Ranked 56 of "**the best millennial universities**" by THE

2021
- Gold Award of TCSA Corporate Sustainability Reports in sustainability
- Founded ASE-NUK Industry-Academic Cooperation Center

2022
- Ranked top favored by enterprises among the mid-sized public universities in the Cheers survey.
- Ranked high in 3 categories in THE University Impact Rankings, among top 5 in Taiwan.
- Signed MOU with Chunghwa Post to promote SDGs + ESG.
- Students Activity Center won Urban Engineering Quality Gold Award.

2023
- Continued ranking top favored by 2000 enterprises in survey
- Join 5G New Technology Learning Demonstration School

▲ Annual Sustainability Achievement Chart

1.1.2 University Organization

The University administration is organized in accordance with the University Organizational Charter. The selection and appointment of administrators are in accordance with the charter. The President is the highest administrator and the University Council is the highest policy making body. In response to environmental, social and governance topics, NUK has established the Committee of Environmental Protection and Safety and Health, the Management Committee of University Fund, and the Committee of University Development as the decision-making committees.

According to the organizational charter, NUK currently has 13 administrative units and 6 academic units, including 5 colleges and general education centers. In addition, there are for university-level Centers, including Executive Management

Training Center (EMBA), Center for Southeast Asia Research, AI Center, ASE-NUK Industry-Academic Cooperation Center, and the Center for English Teaching & Learning Resource Center.

NUK currently has five colleges and a general education center including the School of Humanities and Social Sciences, the School of Law, the School of Management, the School of Science, and the School of Engineering. It has 21 university departments and 2 graduate schools including 22 master's programs, 7 in-service master's programs, 2 advanced business management in-service master's programs (EMBA, EMLBA), 4 international advanced business management master's in-service programs (Vietnam, Shanghai, Haixi, and Thailand), 2 two-year undergraduate in-service programs, and 3 doctoral programs.

▼ Organization

Administrative organizations

President

Vice President, Academic Affair

University Affairs Research Office

Vice President, Administration

Academic Offices
- The College of Humanities and Social Sciences
- The College of Law
- The College of Management
- The College of Science
- The College of Engineering
- The Center of General Education

Administrative Offices
- The Office of Academic Affairs
- The Office of Student Affairs
- The Office of Research and Development
- The Office of International Affairs
- The Teaching Development Center
- Language Center
- The Office of General Affairs
- The Library
- The Continuing Education Center
- The Secretariat
- The Personnel Office
- The Accounting and Statistics Office
- The Office of Physical Education

國立高雄大學

1.2 The Concept of University Affairs Development and Vision

1.2.1 The Concept of University Affairs Development

In response to the social expectation of improving the quality of universities in an all-round way, promoting the diversified development of higher education, fulfilling university social responsibilities, and realizing the publicness of higher education, the University has expanded its implantation in innovative teaching and industry-academic cooperation in the spirit of "deep localization, international connection, and fulfillment of social responsibility". In the 2018-2022 school affairs development plan, in addition to introducing the practice of university social responsibility and the publicness of higher education, it also announced the core concept of pursuing change and promoting the overall physical transformation: internally it will establish SDGs localization (Glocalization) as the goal of physical adjustment is to comprehensively pursue the realization of key goals and system changes, and promote the strategy of collaborating international partners (Southeast Asian universities) to jointly interpret SDGs and grow together, in order to achieving the positioning of "a distinctive and high-quality university that integrates teaching research and industrial development, emphasizes humanistic quality and scientific and technological innovation, and nurtures elite talents" and the vision of "a distinctive university of special features with international reputation".
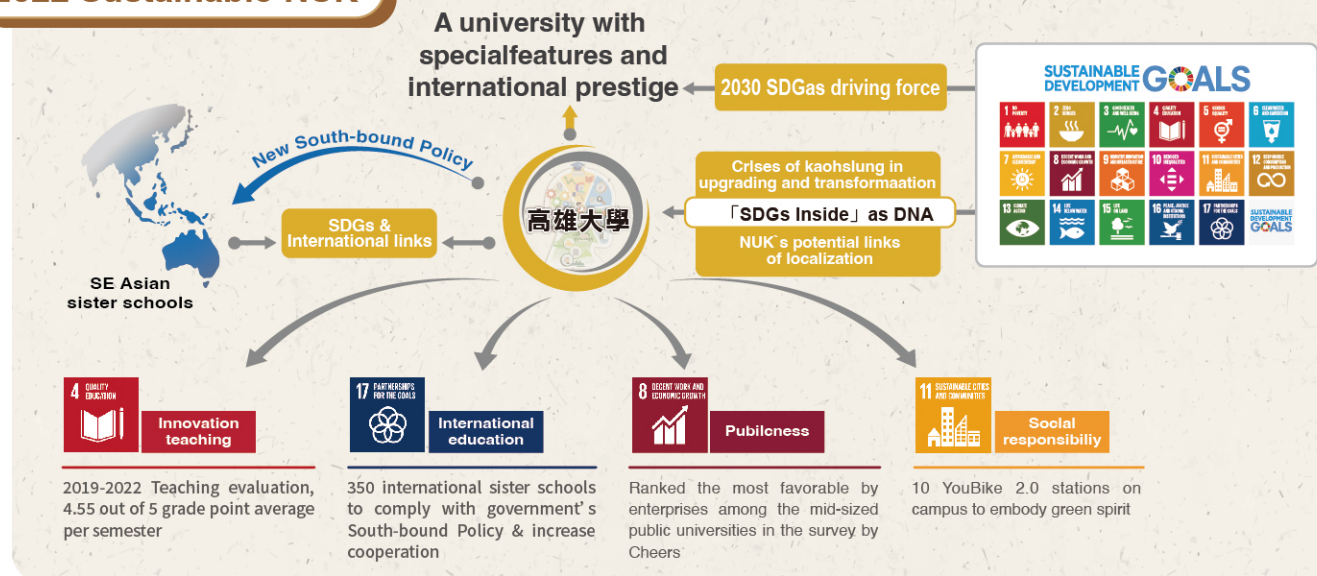
1.2.2 Founding Philosophy and Special Features

At the beginning of its establishment, the University recognized the importance of university social responsibility. In addition to taking into account of integration and mutual assistance of teaching and research, humanities and science, and industry, government and academia, it has also aimed at constructing a university town around the campus area and a green image by launching the overall community construction, improving the quality of the community, and deepening the humanistic spirit of greater Kaohsiung area. In response to SDGs item 4 "education quality", item 8 "dignified employment and economic growth", item 11 "sustainable cities" and item 17 "global partnership" as core action guidelines, since 2017, the school has taken the lead among universities in Taiwan, taking the spirit of the United Nations SDGs-Inside in school governance, docking the four major axes of the Higher Education Sprouting Project, and fully introducing them to teaching, research, school development and external links through international integration as a driving force for school transformation.

In recent years, the University has actively cooperated with the national and industrial talent cultivation policies to give full play to the value of the university. In terms of talent cultivation, courses such as semiconductors, artificial intelligence, AR and VR (virtual reality, augmented reality) have been offered, and in 2021 in cooperation with ASE Group, it established a school-level industry-academic cooperation center to cultivate high-tech talents, and successively AVR+ SCHOOL to cultivate somatosensory technology talents in response to the needs of the Executive Yuan's Greater South Project to build Kaohsiung as the center of 5G, AIoT, and high-end manufacturing. In terms of national performance, in 2022, "Cheers" conducted a survey of 2,000 large enterprises on the results of the "Graduate Performance Most Exceeding Expectations", and NUK was ranked the first place for preference among public mid-sized universities; in terms of sustainable development, it has been ranked for 3 consecutive years. It won the Gold Award of the TCSA Corporate Sustainability Report Award in the University Category in three successive years. It also won recognitions in the THE University Impact Rankings, UK, among which SDG12 "Responsible Consumption and production" it was ranked the top 200 in the world, tied for the fourth place in Taiwan, and the first place in Kaohsiung-Pingtung area.

2022 Sustainable NUK

A university with special features and international prestige

New South-bound Policy

SE Asian sister schools

高雄大學

2030 SDGas driving force

Crlses of kaohslung in upgrading and transformaation

「SDGs Inside」as DNA

NUK´s potential links of localization

SDGs & International links

SUSTAINABLE DEVELOPMENT GOALS

4 QUALITY EDUCATION — Innovation teaching
2019-2022 Teaching evaluation, 4.55 out of 5 grade point average per semester

17 PARTNERSHIPS FOR THE GOALS — International education
350 international sister schools to comply with government's South-bound Policy & increase cooperation

8 DECENT WORK AND ECONOMIC GROWTH — Pubilcness
Ranked the most favorable by enterprises among the mid-sized public universities in the survey by Cheers

11 SUSTAINABLE CITIES AND COMMUNITIES — Social responsibiliy
10 YouBike 2.0 stations on campus to embody green spirit

1.3 Core Concepts of Sustainability, Visions and Strategies

1.3.1 Core Concepts of Sustainability

NUK was committed to the development of a sustainable environment at the beginning of its founding. In 2004, the founding president signed the Talloires Declaration, the first university in Taiwan to sign the Declaration, to demonstrate NUK was resolved to build a green university.

In addition to adopting basic circular economy measures such as energy saving, water saving, carbon reduction, fuel saving, paper saving, and increasing environmental protection and recycling, green buildings are given priority in building expansion planning. In addition, the Sustainability Week is regularly held in May every year to actually practice SDGs, presenting the school's environmental protection achievements with different themes, and promoting the NUK sustainable concept to the faculty, students and the public. In recent years, it has taken the lead among universities in Taiwan to incorporate SDGs as the core of school governance and integrate it into various teaching, research and administrative areas.

In 2009, NUK was awarded "Model Green University" by the Ministry of Education for its dedication and endeavor. In the recent 2022 THE Impact Rankings, NUK in items of SDG 11 (Sustainable Cities), SDG 12 (Responsible Consumption and Production), and SDG 16 (Peace and Justice Institutions) achieved outstanding results.

1.3.2 Visions of Sustainability

Based on the ten concepts of the Talloires Declaration and in cooperation with the government's promotion of energy transformation and 2050 net zero carbon emission policy, the University simultaneously inventory plans 6 major directions in green university, campus carbon neutrality, low-carbon transportation, green buildings, zero-waste and low-carbon diet, citizens participation, actively links industry and society, and implements university values and social responsibilities.

2018-2022 Mid-term School Development

SDG-Inside core strategy

- Teaching & Learning
- Research & Industry-Academia
- Campus facility & Environment
- International Convergence
- Organization & Administration

- Sprout Project
- Industry-Academic Cooperation
- SDGs Sustainable Campus Planning
- USR & Practice Blueprint
- Overall Analysis of Public Universities
- Student & Faculty Characteristics, School Resource

2023-2026 Mid-term School Development

SDGs × USR × ESG Core Values

- Learn to use & Interdisciplinary teaching
- Characteristic research & Industry links
- Sustainable University & Strengthening Competency
- Social responsibility, Internalization & Local links

Formulate 4 University development goals & 12 strategies

SWOT Analysis

Strenghts
- Located in southern semiconductor industry S Corridor
- 1st AVR+ School in Taiwan
- MOE designated model green school
- Complete legal education professional teachers in South

Weakness
- Small campus size
- Insufficient financial resources
- More external certification for sustainability needed
- Integration of learning resources for foreign students needed
- Expansion of local characteristic domain needed

Opportunities
- Emerging new technology
- Global climate action
- UN SDG goals
- Forward-looking talent policy
- Local revitalization policy
- 1+4 International special program

Threats
- Declining birthrate
- Popularization of higher education

SMART Principles

1.3.3 Sustainability Strategy and Action

To develop strategies and action guidelines based on the University's core beliefs and visions, in line with our short-, medium- and long-term school development plans, and to make rolling adjustments according to the implementation status.

Short-Term Plan

Although NUK has a campus planning committee, this is to discuss the existing campus facilities and changes. In order to focus on campus sustainable issues, the Campus Sustainable Development and Planning Committee was established in March 2023 to deal with various issues related to campus sustainable development.

Medium-Term Plan

Introduce the SDGs campus reality game "University Introduction" course, promote SDGs literacy tests, and deepen the students' SDGs-DNA.

Long-term Plan

1. Sustainability Week is held on a regular basis every year to reflect the protection and diversity of the green campus ecosystem and demonstrate the school's efforts in ecological and environmental protection.

2. Introduce "A Curriculum Framework for the Sustainable Development Goals" of Commonwealth of Nations into the school teaching system to assist teachers in reviewing the relevance of course content and SDGs, setting learning goals, and cultivating students' concepts of sustainability.

3. Encourage faculty members to exert of their expertise, cooperate cross-domain, form alliances with social enterprises, promote net-zero transformation in accordance with "SDGs + ESG Specific Action Plans", maximize the benefits of industry-academic cooperation, and launch cross-domain and off-campus SDGs literacy.

4. Introduce the concept of SDGs-Inside through Sprout Project, and establish an "international dialogue language" shared by NUK and the universities in Southeast Asia such as the Philippines, Vietnam, and Indonesia, which is also valued by the universities in the United States and the European Union. Thus, by becoming a learning model for Southeast Asian universities to bridge European and American universities and create international connections, the school is to develop a key carrier for a university with special features. In the future, NUK will continue to use our green university as the basis and combine international efforts to promote SDGs universities (such as partner schools in Southeast Asia, e.g., Bicol University, the Philippines to jointly promote cooperation on sustainable development topics.

5. Since 2018, the NUK sustainable implementation results have been compiled with the sustainability report, which has promoted the development of sustainable action in NUK year by year, and has been affirmed and awarded by the review committees every year.

SDGs-Inside as the core of school governance

- Integrate five aspects of teaching and learning, research and industry-academic cooperation, internalization, campus facility and environment, and organization and administration.
- Connect the four main axis of Sprout Project as the common language for international exchange.

Implement the concept of green university

- Comply with the government Net Zero Carbon Emissions 2050, and launch smart energy saving, alternative energy research and carbon reduction.
- Maintain sustainable campus as habitat for biodiversity.

Strengthen links with industry and society

- Assist transformation and upgrading of industry.
- Continue to be the most favored mid-sized public university by enterprises.
- Handle outstanding athletes to engage in semiconductor industry talent training and vocational training in regional industrial bases (S-Corridor with high-tech talents), and jointly cultivate southern semiconductor talents.

School Affairs Governance & Operations

2.1 Governance procedures

Governance procedures

Operation Mechanism

University Affairs Committee

University Affairs Development Committee

Administration	Administrative Meetings, Internal Control Audit, Campus Planning, Space Allocation
Finance & Personnel Review	University Affairs Fund, Budget Distribution, Personnel Review
Elected Representatives	Faculty Review, Staff Selection, Employees & Management, Personnel review
Offices	Academic Affairs, Student Affairs, Research & Development, General Affairs, The Library & Information, College Affairs
Centers	Teaching Development Center, General Education Center, Extension Education Center

P **School Affairs Development Plan**

D **Tracking Progress of Action Plan**

C **Administrative Control & Assessment**
Teaching Quality Review
Learning Performance Review
School Affairs Research
Crisis Management

A **Amendment of Plan Content & Goals Revision**
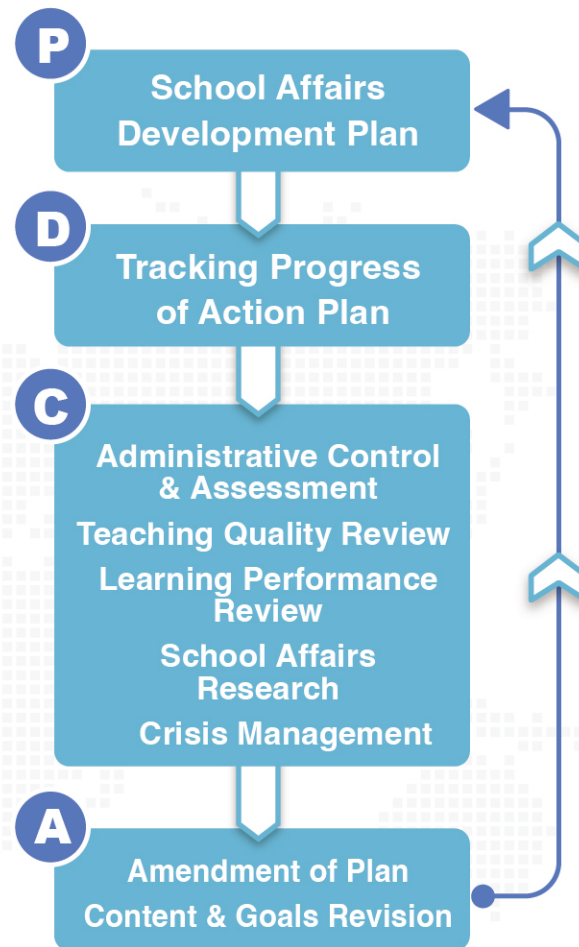
▲ **Governance procedures & Mechanism**

2.1.1 Operations of School-Level Committees

▼

NUK's committees are divided into school-level, college-level, and department-level, and each committee is categorized according to its nature as shown in right:

The school's resource input for the development of school affairs includes: manpower, funds, space, library and equipment, etc., all of which are planned and configured with complete administrative support and relevant regulations, and are supervised, checked and reviewed by various types of selection committees. Details are as follows:

University Affairs Committee

University Affairs Development Committee

Administration
- Administrative Meetings
- Internal Control
- Campus Planning
- Internal Review

Finance
- University Affairs Fund
- Income & Expenditure
- Budget Distribution
- Space Allocation

Personnel
- Faculty Review
- Staff Selection
- Employees & Management
- Human Resource Review

Offices
- Academic Affairs
- Student Affairs
- General Affairs
- Library & Information

Centers
- Teaching Development Center
- General Education Center
- Extension Education Center
- Environment & Safety Center

▲ University Committees

▼ Committee functions

	University Level	College Level	Department	Center
Personnel	• The University-level Faculty Evaluation Committee • The Staff Selection & Performance Evaluation Committee • The Manpower Evaluation Committee	The College Faculty Evaluation Committee	The Department Faculty Evaluation Committee	The Center Committee
Expenditure	• The University Affairs Fund Management Committee • The Budget Distribution Committee	The College Affairs Committee	The Department Affairs Committee	The Center Committee
Space	• The Space Distribution & Management Committee • The Campus Substantively and Planning Committee	The College Affairs Committee	The Department Affairs Committee	The Center Committee
Library & Equipment	• The Library Committee • The Precision Instrument Committee	The College Library Committee	The Center Committee	The Center Committee

2.1.2 System & Operations of Elected Representatives

For the committees related to the rights and interests of faculty, staff and students, except for the members of each gender, more than one-third of the committee members are included in the committee members voted (or recommended) by relevant stakeholders to protect the rights and interests of relevant personnel and fully express their opinions.

2.1.3 Link Results of the University, College, Department, Institute and Research Centers and PDCA

After coordination of related departments and faculty, NUK Artificial Intelligence Research Center was founded in line with the national development policy of high-tech artificial intelligence (AI) to cultivate various cross-field talents suitable for the development of AI-related industries, expand NUK's AI research and development resources, and integrate the AI relationship institute and teachers in the University. In 2022, under the cross-disciplinary cooperation of Professor Wu Zhihong of the Department of Electrical Engineering, Professor Hong Zongbei of the Department of Information Engineering, Professor Zhong Yizhang of the Department of Chemical Engineering and Materials Engineering, and Professor Yu Zhaoqiu of the Department of Civil and Environmental Engineering, their work result, "Laser Assisted Rapid Response Controlled Adhesion Smart Tape" won the Future Science and Technology Award of the National Science and Technology Council. In recent years, it has assisted enterprises in conducting hundreds of hours of training courses to strengthen the digital skills of employees, cultivate artificial intelligence seed talents in various departments of enterprises, and guide internal development towards manufacturing digitalization, introduce artificial intelligence applications to accelerate intelligent manufacturing, and enhance the competitiveness of enterprises. In addition to cross-domain cooperation and cultivation of scientific and technological talents, the center combines the "e-Eureka Information Volunteer Group" of the Department of Electrical Engineering to go to elementary schools in remote areas to teach students and promote information education. It also cooperates with the Department of Electrical Engineering, the Department of Information Engineering, the Department of Information Management, and The Department of Kinesiology, Health, and Leisure Studies to develop the application of smart technology in sports and health.

The Disaster Prevention and Rescue Science and Technology Research Center affiliated to the School of Engineering was inaugurated on April 8, 2015, which is the first disaster prevention center in Kaohsiung City. It combines the Department of Civil and Environmental Engineering to provide disaster prevention related courses, assist students to obtain the specialist certificate of disaster prevention, and provide governments advice in storm and landslide related disasters, assist Kaohsiung City Government in formulating disaster prevention and rescue plans, implementing disaster prevention and rescue work, and coordinating disaster prevention and relief resources, and further expand the training of national prevention and rescue personnel.

Committee	Number	Male	Female	No. elected or recommended
University Affairs Council	118	88	30	73
University faculty Evaluation Committee	21	14	7	11
Staff Selection & Performance Evaluation Committee	11	6	5	4
University Employed Staff Evaluation Committee	13	5	8	6
Faculty Grievance Committee	17	10	7	11
Employees & Management Committee	12	5	7	6
Student Rewards and Disciplinary Committee				

▲ Composition of important governing committees
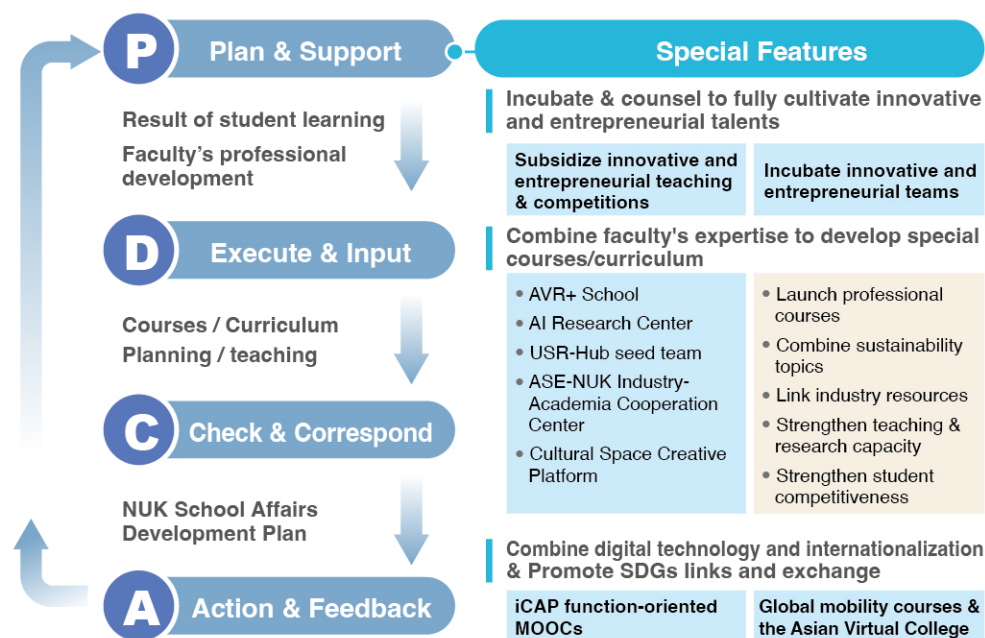
▲ PDCA of linking the results of faculty's teaching & research and student learning

2.1.4 Mechanism and Practice of Management and Review of the Faculty and Students

▼

Reviews of Measures of reviewing, managing, assessing teaching quality and learning performance and administrative policy are as follows:

Faculty and teaching

1. According to the regulations for promotion, teacher evaluation, teaching evaluation, and counseling, the three levels of Faculty Evaluation Committee conduct faculty's professional review, and the Academic Affairs Office and Teaching Development Center provide guidance for faculty's professional growth.

2. "Implementation Measures for Teaching Consultation and Guidance" is implemented to improve those whose teaching performances are not satisfactory. In addition to Academic Affairs Office sending letters to the related faculty members and department heads, the faculty members are required to join the related workshops held by Academic Affairs Office at least twice in a school year. those whose teaching performances do not reach 3.5 points in review of 2 or more subjects in the most recent six semesters are required to prepare related materials to report to the Teaching Advisory Committee and take guidance and supervision according to the mentor systems.

3. In response to the trend of digital technology, "Digital Learning Course" questionnaire is added to the 3rd part in order to provide faculty with feedbacks and references in their teaching and digital learning courses to optimize teaching quality.

Aspects of student learning effectiveness

1. From the selection of suitable candidates for admission to the comprehensive assessment of employer satisfaction after graduation:

Admission end	the pursuit of the right talent and the right place, the growth of the school and the sustainable operation.
Learning Support	Encourage students' learning conditions.
Learning Assessment	Improve and assess the quality of learning to ensure the correctness of data analysis.

NUK School Affairs Development Plan

corresponding
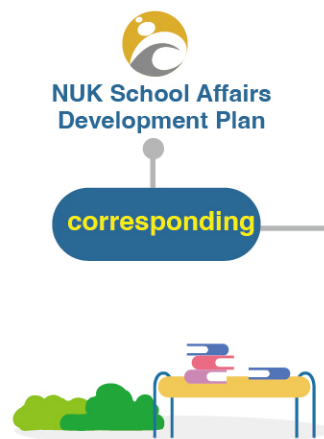
▼ Ensure teaching quality & improve academic career development

Mechanism & Strategies

Multiple tracks for promotion / Multiple tracks for rewards / Measures for teaching improvements

Executions & Results

Results of multiple tracks for promotion
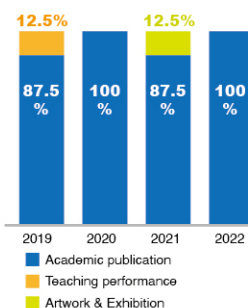
Rewards & subsidies for academic publications
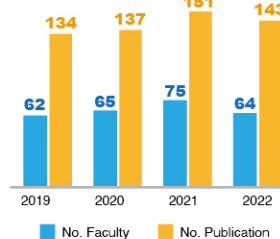
Evaluation results of faculty performance

■ Academic publication
■ Teaching performance
■ Artwork & Exhibition

■ No. Faculty ■ No. Publication

■ No. Faculty ■ No. Reviewed
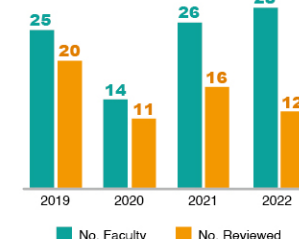
▼ Student learning effectiveness

Focuses

Admission end

college & dept growth and sustainable management

Multiple admission channels suitable for right talents
- New measures to select talents
- Promote in high school & seek cooperation
- Plan quotas for the economically & culturally underprivileged
- Optimize the track and improve the review mechanism
- Cooperate with enterprises to found special classes
- Expand recruitment of overseas students

Learning support end

improve students' learning conditions

Enhance New Student Orientation Support & encourage cross-domain/border learning
- Gamify learning mode
- Provide students with career counselling
- Connect with the trend of industrial development
- Exchange study/dual school system & high ratio of foreign students
  ↳ satisfactory results of cross-border international exchange

Learning review end

improve data quality and quantity

Enhance learning adaptability & review quality, ensure the validity of data analyses
- Questionnaire of feature students' learning
- Connection of learning activities & SDGs
- The flow of graduates and employer satisfaction surveys
  ↳ Feedback school affairs planning & departmental developmen

2. Review and feedback mechanism to ensure learning effectiveness: Each department has established a comprehensive mechanism for managing the quality of student learning. In addition to cooperating with campus-wide surveys and formulating assessment self-improvement points, the school regularly convenes departmental meetings, curriculum committees, advisory committees, and program review seminar to identify teaching and learning improvement projects through exchanges of views with faculty, students, graduating alumni, parents, academics, and the industrial sector.

Learning early warning system

According to "The Key Points of Students' Coursework Guidance", early warning is implemented for students who fail more than one half of the subjects in the previous semester, and potential early warning is given for those who fail the midterm examination.

College Examination

1-2 times per academic year, the convener organizes the common curriculum resources of the college and checks the results, and the examination results account for a certain percentage of the total score. As of 2022, the Faculty of Science and the Faculty of Engineering have institutionalized the examination, and will guide other colleges in the future.

Measures for Graduation Qualification Test of Information Basic Competency

Every semester, based on the "Measures for Graduation Qualification Test of Information Basic Competency", the students are tested on five subjects including programming. Online tests and practice questions are provided. Since 2020, "Programming and Computational Thinking" has been listed as one of the five major exams. In 2022, the PaGamO digital learning platform was introduced. 60 kinds of certificates and 4 kinds of competitions are adopted as credits. The weights are adjusted for information and non-information students to be close to differentiation.

▼ Evaluation & feedback mechanism of student learning effectiveness
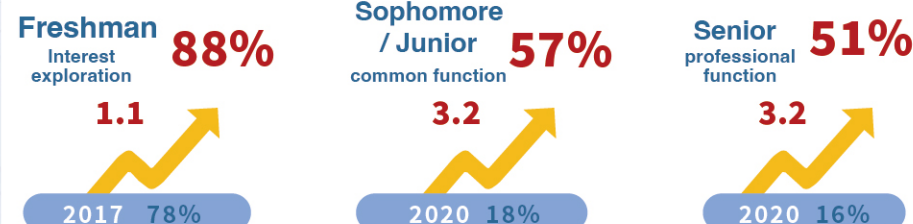
Mechanism & Strategies

- **Construct review mechanism of teaching results**
- **Promote teaching survey & evaluation**
- **Implement result analysis of teaching survey for improvement**

Executions & Results

UCAN questionnaire

Freshman
Interest exploration
88%
1.1
2017   78%

Sophomore / Junior
common function
57%
3.2
2020   18%

Senior
professional function
51%
3.2
2020   16%

NUK student learning questionnaire

NUK SLS **85%**
1.7
2014-2020   average 50%

School Affairs Research & Teaching feedback

Effect of soft skills on academic performance

Learning perseverance
continue learning, problem solving, work responsibility & discipline

Plan promotion
deepen USR engagement, internships, club activity & international exchange

2.2 Risk Management

2.2.1 Risk Analysis

Risk analysis

The NUK SWOT analysis presents internal and external influencing factors: internationalization of higher education, decline of birth rate and aging population, national science and technology policy, Sprout Project of higher education, industrial development trend of Kaohsiung City.

SWOT Analysis

Strenghts
- Located in southern semiconductor industry S Corridor
- 1st AVR+ School in Taiwan
- MOE designated model green school
- Complete legal education professional teachers in South

Opportunities
- Emerging new technology
- Global climate action
- UN SDG goals
- Forward-looking talent policy
- Local revitalization policy
- 1+4 International special program

Weakness
- Small campus size
- Insufficient financial resources
- More external certification for sustainability needed
- Integration of learning resources for foreign students needed
- Expansion of local characteristic domain needed

Threats
- Declining birthrate
- Popularization of higher education

SMART Principles

Actions in Response

In the face of the results of the SWOT analysis mentioned above, in the past, when the University implemented the results of the Teaching Excellence Program from 2015 to 2017 years, the focus of the University's development from 2018 to 2022 years has been drawn up, which is to continue to make progress in the directions of 1) flexibility in teaching innovation; 2) reinforcing of the industry-academia in the local community; 3) linking of international cooperation with the SDGs; and 4) adding values to the SDGs-Inside, and to put forward five strategic objectives, evaluation indexes and action plans for the University development. In 2023-2026 it not only continues the core concept of "SDGs-Inside", but also emphasizes the establishment of multiple links to external resources, and analyzes

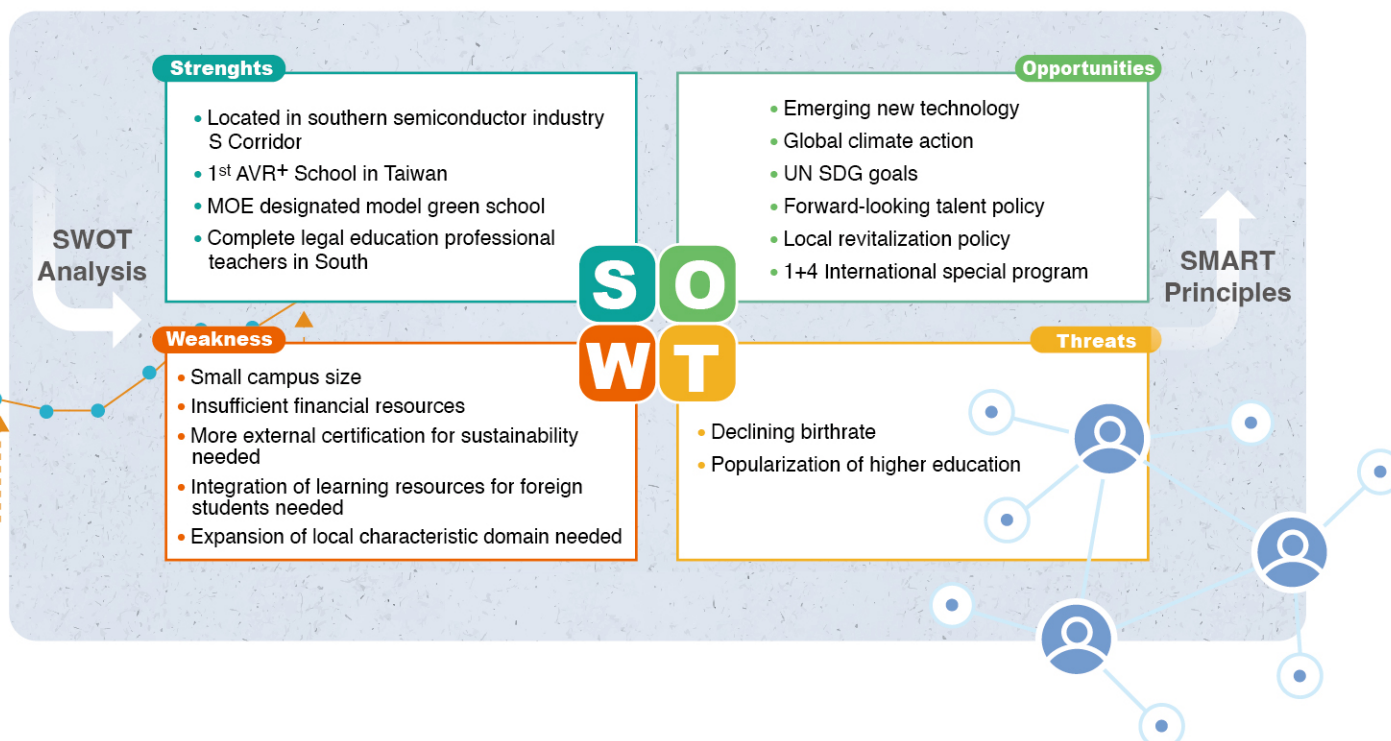the school's potential for development through SWOT analysis, and formulates four major development goals, and 12 strategies and action plans.

2018-2022 Mid-term School Development ▶ **2023-2026 Mid-term School Development**

SDG-Inside core strategy

Teaching & Learning	• Sprout Project
Research & Industry-Academia	• Industry-Academic Cooperation
Campus facility & Environment	• SDGs Sustainable Campus Planning
International Convergence	• USR & Practice Blueprint
Organization & Administration	• Overall Analysis of Public Universities • Student & Faculty Characteristics, School Resource

SDGs × USR × ESG Core Values

- Learn to use & Interdisciplinary teaching
- Characteristic research & Industry links
- Sustainable University & Strengthening Competency
- Social responsibility, Internalization & Local links

Formulate 4 University development goals & 12 strategies

2.2.2 Internal control

In order to ensure the implementation of school governance, in addition to holding relevant meetings regularly to track major work items, the University also sets up relevant management and examination mechanisms to conduct internal control audits to ensure the quality of administrative operations.

Establish an internal quality assurance mechanism in accordance with the school development and implement it

1. The mechanism and practice of administrative measures, management and evaluation of school governance :

Set up the "National University of Kaohsiung Internal Control Team" and "Internal Control System" webpage, complete the "Self-assessment of each office's operation Guidance" and sign the internal control statement.

Set up "School Fund Auditors", formulate "NUK School Fund Audit Implementation Key Points", carry out school fund audits in accordance with regulations every year, and send the audit results to the University Council meeting for future reference.

Set up the "NUK Internal Audit Team" and set up the "NUK Internal Audit Team" in a task-organized manner in accordance with the "Government Internal Control and Supervision Operation Points" to handle internal audit work.

2. Mechanisms and practices for checking teaching quality and learning effectiveness :

Faculty and teaching

According to the measures of faculty promotion, evaluation, teaching consultation and counseling, and the deliberation of the three levels of Faculty Evaluation Committees, follow-up counseling for faculty with unsatisfactory teaching evaluations; those whose teaching performances do not reach 3.5 points in review of 2 or more semesters in the recent 6 semesters, the Academic Affairs Office will arrange video recording throughout the semester and guidance and supervision. In response to digital development and the Ministry of Education's simplified inspections, a new "digital learning course" is added for faculty to give feedback in order to optimize teaching quality.

Student learning

- Learning early warning system: According to " Key Points of Student Coursework Guidance", early warning will be given to students who failed more than half of the subjects in the previous semester, and potential early warning will be given to those who fail the mid-term exam.

- College Examination: 1-2 times per academic year, with the dean acting as the convener, coordinating the common curriculum resources of the college and checking the results. As of 2022, the Faculty of Science and of Engineering have institutionalized the examination, and will guide other colleges in the future.

- In accordance with "Methods of Basic Information Competency Test for Graduation Qualification Method", five subjects are tested each semester, including programming, and online test and practice questions are provided. Since 2020, "Programming and Computational Thinking" has been listed as one of the five major exams. In 2022, the PaGamO digital learning platform was introduced. 60 kinds of certificates and 4 kinds of competitions are used as credits. The weights are adjusted for information and non-information students to be close to differentiation.

3. Mechanism & Practice of Project Implementation, Evaluation and Improvement :

Project Implementation

The NUK Sprout Project is headed by the President as the project director, the Project Office is responsible for controlling the funds, and each administrative office is responsible for implementation. As for the National Science Council and non-National Science Council projects (including industry-university and government agency projects), they are reviewed by the approval unit, and the school handles administrative matters such as project closure.

Assessment mechanism and practice

The Sprout Project is managed and controlled by the convener of each main axis, and KPIs are set to reflect the implementation results. The Sprout Project Office adopts the cycle of "Plan-Do-Check-Act (PDCA)" quality control, monthly evaluation, cross-axis bimonthly evaluation, and fully implements the accountability and feedback mechanism. Since 2019, an evaluation meeting is required (Appendix 1-9) for those whose execution plan amounts to more than 5 million yuan, all of which will be assessed in accordance with the contract specifications and implementation schedule.
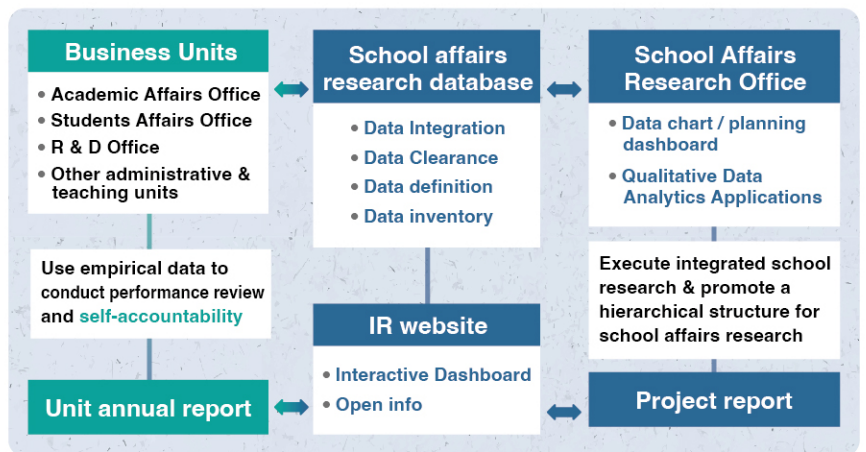
Improve mechanism and practices

Since the funding of Sprout Project is approved year by year, in April, the funding can be uncertain for over 3 months. Therefore, in November, NUK will advance the funds for the coming year from the school fund to facilitate the Project; and confirm the resources and indicators required for the Project in the new year for implementation.

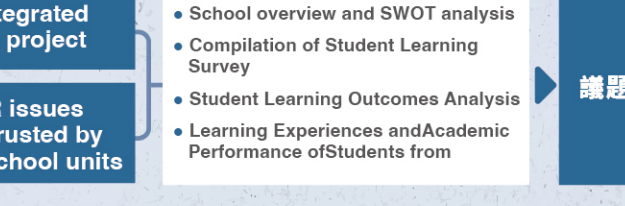## Use school affairs research data to improve the quality of governance and demonstrate effectiveness

1. School Affairs Research Mechanism :

Since the establishment of the Office of School Affairs Research in 2015, NUK has injected resources through the Sprout Project to collect and integrate qualitative and quantitative data from various departments and offices, and to gradually build up a data-driven mechanism for the management of school affairs and research, with the database construction process as shown in Attachment 1-1, and to assist offices at various levels in using the empirical data to conduct decision-making analysis and performance evaluation, and to provide reference bases for decision-making in academic affairs through the joint planning and implementation of research issues (Fig. 1-10). In order to improve the operation of the organization, there are application forms for the establishment of a research office, the disclosure of university information, and the use of and access to university research materials.

Business Units
- Academic Affairs Office
- Students Affairs Office
- R & D Office
- Other administrative & teaching units

Use empirical data to conduct performance review and self-accountability

Unit annual report

School affairs research database
- Data Integration
- Data Clearance
- Data definition
- Data inventory

IR website
- Interactive Dashboard
- Open info

School Affairs Research Office
- Data chart / planning dashboard
- Qualitative Data Analytics Applications

Execute integrated school research & promote a hierarchical structure for school affairs research

Project report

2. Feedback of the University Affairs Research Results :

The existing school affairs research mechanism is categorized into Top-down and Bottom-up, in order to promote the hierarchical governance structure of school affairs, and to achieve the goal of both high decision-making and executive power. The former is an integrated research project planned and implemented by the University Affairs Research Office, while the latter is a collaborative project between administrative units and academic units, with a feedback mechanism for the research results as shown in Figure 1-11. In addition, in order to diversify the perspectives of decision-making for school affairs, a draft of the faculty cooperation on issues and implementation has been formulated to enhance the quality of school affairs research decisions through the solicitation and review of faculty collaborative projects. Relevant analytical and statistical reports are appropriately included in the annual accountability report in accordance with the confidentiality of the information, and are published on the school research information disclosure platform for access by stakeholders.

▼ Flowchart of Feedback Mechanism on School Research Outcomes

Integrated IR project

IR issues entrusted by the school units

- School overview and SWOT analysis
- Compilation of Student Learning Survey
- Student Learning Outcomes Analysis
- Learning Experiences andAcademic Performance ofStudents from

議題分析

Joint Discussions by issues entrusted units

Drawing up of the proposed scheme

School Affairs Research Information Disclosure Platform / Annual Accountability Report / Administrative Meeting / School Affairs Meeting / School Development Committee Meeting

In 2019-2022, the topics of school affairs research are divided into three aspects: school performance, talent cultivation and education equity (App. 1-10). According to the confidentiality of materials, they can be divided into public release, partial public release and non-publishable. The description is as follows:

Public release

It involves education publicity and equity and the published data cannot be cross-compared, e.g., registration rate, number of students and student-teacher ratio, which can be queried through an interactive dashboard.

Partial public release

A large amount of personal data, e.g., the learning outcomes of transfer students are disclosed under specific topics on the interactive dashboard after the data are de-identified and extracted into overall indicators. Only first-level administrators and department chairs are authorized to inspect this, and other inspections are subject to application.

Non-publishable

A large amount of personal information and confidential information related to school affairs, e.g., recruitment strategies, faculty promotion and evaluation systems. The analysis results are only for reference by relevant units, and will be presented at the administrative meeting, school affairs meeting, school affairs development committee meeting report.

By seeking external recognition for its sustainable features, NUK will enhance its international profile and enlarge its campus sustainability.

By seeking external recognition for its sustainable features, NUK will enhance its international profile and enlarge its campus sustainability.

Participated in THE World University Impact Rankings

Since 2019, NUK has participated in the Rankings. It achieved a good result of 201-300 in the first year. However, with the increase of the total number of participating schools, its ranking has a downward trend. With close look of the proportion of the total number of participating schools, there is a decline in 2021. Otherwise, it is actually on the rise, showing that its efforts and achievements in the SDGs have been affirmed.

Participate in the evaluation of sustainability reports

Since 2019, the sustainability report of the previous year has been regularly released and submitted to TCSA for Corporate Sustainability Reports Awards annually. From 2018 to 2021, NUK has won 2 gold and 1 silver awards in university category.

Participate in The UI GreenMetric World University Rankings

In order to understand the sustainable development of the campus environment, NUK participated in UI GreenMetric initiated by Universitas Indonesia in 2010 for the first time in 2022, aiming at inspecting environmental infrastructure, energy and climate change, waste, water resources, transportation, education and research projects. A total of 1,050 schools participated, and NUK was ranked 319th.

2.3 Maintenance & Protection of Data Security & Campus Safety

Data Security

1. Management system of data security :

In order to ensure the confidentiality, integrity, and usability of NUK information assets, and to comply with the requirements of relevant laws and regulations, and to avoid internal and external threats and attacks, it has formulated an information communication security maintenance plan and related information security protection and control measures in accordance with the "Information Communication Security Management Law" and its relevant sub-laws, and with reference to the "Information Communication Security and Personal Data Management Standards for Educational Systems", and has implemented a year-by-year information security management system by means of a cyclical quality management process of "Plan-Do-Check-Act" (PDCA). Through the cycle of PDCA quality management, the University information communication security management system will be implemented year by year, and the information security and personal data protection will be integrated in 2021 by formulating the "Key Points for the Management of Information Communication Security and Personal Data Protection" and setting up an inter-unit Information Communication Security and Personal Data Protection Promotion Committee, which will consist of the Administrative Vice-President as the Convenor, and the first-level administrators as the ex-officio members. The Committee will meet at least once a year to be responsible for the management of the university's information security. The committee meets at least once a year and is responsible for the coordination and deliberation of the university's information security and personal data protection policies, programs, and resource deployment. In 2022, the Committee had promoted the introduction of an information security management system for the entire university's administrative and academic units, formulate an ongoing plan for the operation of the core system and conduct regular drills, as well as enhance staff training and internal audits, and other related operations.
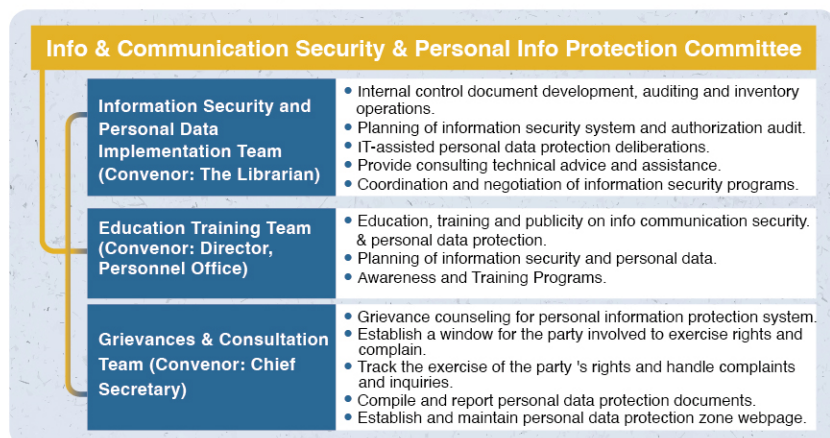
▲ Organization Structure of Info Communication Security & Personal Information Protection Committee

Task	Result
Convening of the Info Communication Security and Personal Data Protection Promotion Committee	Review the school's administrative policies, regulations, and goals for the year.
Task force	Establishment of a register of window staff in each unit for regular training of seed staff and promotion of information security business within the unit.
Information security education and training	Four campus-wide training sessions were held, with a total of 241 participants.
Information asset inventory and risk assessment	A total of 36 administrative/academic units have fully implemented.
Perform daily maintenance	Each unit will follow the procedures of each stage: • Perform server room management • System and network check • Backup execution and inspection • SSDLC check • Handle of abnormal events and notification process.
Vulnerability test	Completed 151 equipment vulnerability tests
Continuous drill of core system operations	Completed ePortfolios and email system operation continuous drill
Internal audits	Completed internal audits of the Library, International Affairs Office, and Life Sciences Dept.
Seek external resource	In the 2nd phase of Sprout Project, a special chapter on information security enhancement is included to strive for external resources to continue promoting information security.

2. Continuous input of resources :

Continuously investing in information security related areas, strengthening the information security protection response yearly, adopting proactive information security defense strategy, and deploying the information security equipment with strong defense mechanism. Investment resources in 2022 include :

A. Establish a school-wide vulnerability management platform to effectively manage the distribution and repair of weaknesses in the information systems of all units on campus, provide maintenance personnel and information security personnel with a grasp of the current situation, and complete weakness repairs in a timely manner to avoid intrusion attacks.

B. Expand the capacity of the information system data backup mechanism to protect the important data of the campus core system, in response to the data reconstruction required for system recovery after the system is damaged by natural or man-made disasters.

C. Complete the expansion of the green energy server room of the school's Library and Information Building, which can provide all units with a school-wide information system for centralized management. In addition to improving the application efficiency of computer resources, it also implements the school's SDGs-Inside strategy to achieve the goal of energy conservation and carbon reduction on campus.

3. Handling Procedures of Information Security Incident :

In accordance with the "Information Security Incident Notification and Contingency Measures", NUK has formulated a clear information security incident handling notification process and contingency measures, and set up.

▼ Statistics on the number of security incursions in NUK

▲ Statistics on the number of security incursions in the past 5 years
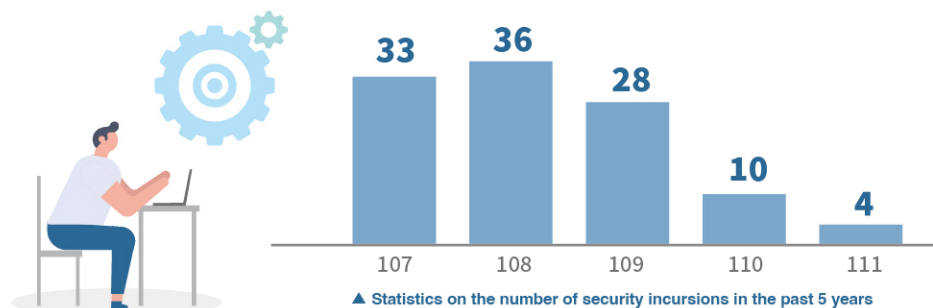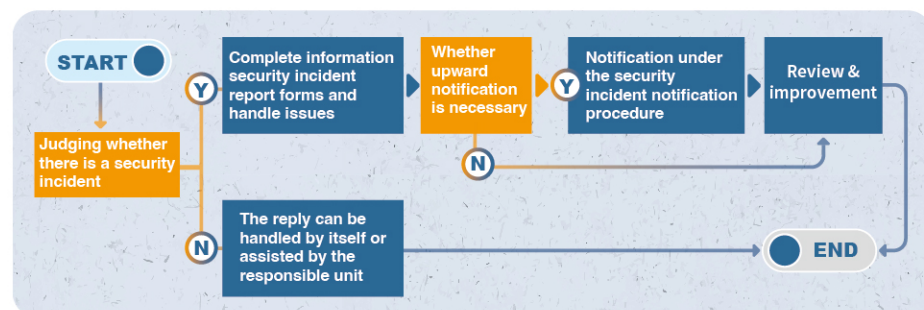
Campus Crisis Management and Effectiveness

1. School Crisis Management Mechanism and Operation：

Crisis management at the University is divided into prevention, management and recovery. Financial prudence is used to program, allocate and mitigate risks.

- Define the key points of response operation and handling process: Define the "Campus Disaster Emergency Response Key Points of Operation" and the "Campus Emergency Response Flow Chart" to determine the process and the authority and responsibility of each; and set up an emergency response team.

- Establishment of a Spokesperson System: The Vice President for Academic Affairs will serve as the spokesperson for the University. A press release or statement will be prepared by the Secretariat, compiling information from each unit, and then approved according to the procedures before the spokesperson delivers a unified statement.

- Establish a notification system and an emergency network: The University has set up an "Emergency Contact Center" in the school police station, and a 24-hour emergency phone number on the homepage of the University's official website is to receive emergencies around the clock and report them to the University Security Center in a sequential manner.

- Educational training, awareness raising and drills: Through various assemblies and electronic media, all the university faculty, staff and students are educated, and crisis simulation drills are organized regularly to enhance the crisis awareness and crisis management skills of the entire university.

- Improve campus environment and equipment: Regular inspection and repair of campus space, facilities and equipment; in addition, supplemented by the current technology, the construction of a campus safety net, strengthened security facilities to prevent the occurrence of accidents.

- Establish a self-audit mechanism and division of labor in accordance with authority and responsibility: In line with the Ministry of Education's Campus Safety Audit Form, coordination and division of labor meetings are held to ensure that campus risks are managed in accordance with the authority and responsibility of each office, so as to avoid crises.

- Prudent preparation of annual budgets and proper allocation of school funds: In accordance with Article 30 of the "Regulations on the Management and Supervision of National University Institutional Funds," annual budgets are prepared prudently, and budget allocation meetings are held to allocate funds prudently to various businesses, so as to minimize the financial risk of a possible shortfall in the final budget.

Crisis management

The "Campus Disaster Emergency Response Practice Points" are used to minimize damage and eliminate crises. In the event of a major financial incident, the Controller's Office will initiate cost-saving measures to minimize the financial crisis.

Recovery

When the crisis is over, normal operation will be resumed and things will be learned, reviewed and improved from the experience. Care and counseling will be continuously provided to those affected by the crisis. Contingency plans will be revised to improve them.

2. Effectiveness of Crisis Management in School：

Crisis Prevention

Educational training and publicity activities will be continuously organized, as well as regular crisis drills to enhance crisis awareness and response. In addition, mental health is promoted among staff and students to minimize and eliminate crisis at an early stage. First aid training and related injury and illness management courses are promoted every year. The campus environment and equipment are improved, and inspections and repairs are conducted to minimize the risk factors of environmental factors in order to comply with the standard requirements of the facilities and equipment.

Category	Place	Time	Office in charge
Lab safety & maintenance	Assembly Hall	Freshman Week	General Affairs Office
fire drill	Dormitories	After freshman students move in	Students Affairs Office & General Affairs Office
Archives Emergency Response Drill	Documents & Files Section	Once a year	General Affairs Office & the Library

Date	Activity	No. Participant
2-6	Visits and reviews on off-campus rental housing safety	98
2-6	Handling off-campus rental disputes	2
2-9	Visits and reviews on additional off-campus rental housing safety; update rental information website	6
2/22-26	Friendly Campus Week; petition for anti-drug & anti-bullying	250
3/14-18	Expo of off-campus rental housing	125
3/18	Visit Tainan Cultural & Creative Park on "Anti-drug Education Exhibition"	18
5/3	Substance Abuse Prevention and Tobacco Control Volunteer Workers Training Seminar	25
5/28	Anti-smoking paintball activity	250
9/22-30	Friendly Campus Week; petition for anti-drug & anti-bullying	320
10/12	Officers meeting incorporates drug and tobacco prevention, campus traffic safety	About 120
9/7-8	Lecture on drug abuse prevention and legal education	950
9/21	"We Are NUK" Fair: Anti-smoking and anti-drug campaign	125
10/19	Volunteer staff training seminar for drug and tobacco prevention	25
10/24	Campaign on prevention of drug abuse, Jia-wei Primary School, Kao-hsiung City	About 33
11-12	Class advisors' visits on off-campus rental housing	797
12/24	Handling off-campus rental disputes	1
3/30	The beginning-of-the-semester dormitory residents' assembly, Spring 2021	62
5/5	Celebrating Mother's Day – making bouquets	25
9/6	Dormitory fire drill	About 1500
10/4	The beginning-of-the-semester dormitory residents' assembly, Fall, 2022	65
10/19	Seminar on fire equipment for dormitory wardens	18
9/7-8	Freshmen Week, promotion for campus safety and legal education, 2021	About 1200
9/28	Implementing National Disaster Prevention Day Earthquake Evacuation Covering Drill 2021	250
10/11	Officers meeting incorporates drug and tobacco prevention, campus traffic safety	About 120

Crisis management

On February 3, 2020, the Ministry of Education convened university representatives to discuss and announce the principles of responding to the Covid pandemic, and immediately activated the Response Team. On February 4, it was decided to postpone the second semester of the 2019 academic year to February 25 to reduce the risk of clustering; On May 19, 2021, the "NUK Pandemic Prevention Action" LINE group was established to communicate the instructions of the Command Center and the Ministry of Education. It was expected to be decommissioned on May 1, 2023 in accordance with the Ministry of Education's epidemic prevention guidelines. In order to avoid the impact of the Covid pandemic on schooling, "Regulations for Safe and Flexible Learning in Response to Severe and Special Infectious Epidemics" are established, and online teaching was practiced to protect the rights of learning.

	2019	2020	2021	2022
Total no. school safety cases	68	66	48	228
Accident	50	31	28	40
Security maintenance incident	4	10	10	6
Violence and Deviant Behavior	0	4	0	1
Conflict of discipline	0	1	0	1
Child Juvenile Protection Incident	6	5	1	2
Natural disaster	0	0	0	0
Occurrence of disease	8	11	7	177
Others	0	4	2	1

Post recovery and crisis response enhancement

In addition to allocating annual funds for restoration, the school has been actively seeking funding from the Ministry of Education and other organizations for the restoration, and have achieved the following results in order to create a friendly and safe green space.

Project	Year	Item	Total Funds ($'000)	Result
823 Rainstorm Damage Recovery and Repair	2018-2019	Repair of school buildings and campus facilities.	11,281	Prioritization of urgent and safety-related projects has been completed.
Books & Equipment	2019-2023	Improve safety of campus facilities	6,516	Improve emergency response, access control, and driveway access control facilities at all buildings.
		Fire safety	2,614	Improve smoke detectors, emergency lighting, firefighting piping, broadcast blackout and zone control modules.
		Lab safety	4,313	Improve laboratory environmental sanitation system, extraction system, personal protection, centralized double sinks.
Sustainable Campus 360-degree Security Net	2021	Reinforce safety of campus facilities	11,710	Complete the safety facilities in dangerous areas, multi-dimensional distress system, and interface with the police reporting APP.

2.4 Gender Equality and Health Infrastructure

In order to promote gender equality, eliminate gender discrimination, maintain human dignity, establish gender-equal educational resources and environment, the relevant resources are coordinated and integrated. "Gender Equality Education Committee" has four groups in accordance with the "Gender Equality in Education Act", including the administrative planning, teaching promotion, prevention and treatment, and campus security. In addition, "Regulations on the Implementation of NUK Gender Equality Education", " Regulations on NUK Campus Sexual Assault, Sexual Harassment or Sexual Bullying Prevention", "Measures for the Prevention and Control of Sexual Harassment by Faculty and Staff of NUK, Key Points for Grievance and Disciplinary Action", and "Principles of NUK" are also stipulated. The students are allowed to extend their years of study up to two years due to pregnancy, giving birth, or child-rearing under the age of 3.

Key management measures

1. All meetings and activities of the school are handled in accordance with the gender ratio, and a safe campus environment is established and gender equality education is promoted to be a gender-friendly campus.

2. The campus hazard map is regularly updated and announced, and relevant notices are publicized at various assemblies and activities.

3. Campus environment safety inspection :

   A. Regular inspections of every corner of the campus and 11 emergency buttons can be directly connected to the guard room.

   B. Regularly inspect whether the doors and windows of each building are closed at night.

4. Established the NUK Gender Equality Education Information Network to provide relevant information for the reference of all faculty, staff, and students.

5. Gender Equality Education Incentive Mechanism: In accordance with the "NUK Encourages Teachers to Apply for National Science and Technology Council Special Research Project Grants", the R&D Office will increase the amount of grant depending on the relevance of the topic and the current budget if the research topic is related to gender equality.

In order to enable students to enjoy learning and develop their bodies and minds in a balanced manner, the Counseling and Guidance Section is dedicated to promote students' well-being, gender equality, and emotional counseling. It not only draws up the gender equality education implementation plan, compiles the "Handbook for Preventing and Protecting from Sexual Harassment, Sexual Assault, and Sexual Bullying on Campus," advocates the freshmen gender equality education, organizes "Sexual Equality Education Seeds Training" for volunteers, and regularly holds the "Intimacy Relationship Growth Groups and Workshops". It seeks in obtaining the subsidies from the Ministry of Education for the counseling work.

Percentage of women in schools

1. Female academics make up 23.3% of total teachers in 2022

2. Female executives make up 28% of total executives in 2022 (academic + administrative units)

Implementation results

1. In 2022, seven cases of campus sexual equality incidents were handled, and cooperated with the Ministry of Education to fill in the indicators of the proposed performance-based grants for 2022 - "Gender Equality Education" project, and compiled the budget for gender equality funding for 2023, as well as the status of the implementation of the 2022 Gender Equality Education Implementation Plan.

2. In response to the recent rise in students' awareness of sexual equality and their willingness to come forward and apply for investigations to protect their rights, and to remind students of the line between joking and sexual harassment, the Teaching Excellence Seminar on December 20, 2022, invited Ms. Lin Su-huei, a lawyer specializing in sexual equality and a professional of the Ministry of Education's pool of professionals for investigating incidents of sexual assault, sexual harassment, or sexual bullying on campus, to deliver a keynote speech.

3. The Ministry of Education commissioned NUK to organize a full-day conference on the handling of gender incidents on campus on December 19, 2022, with an estimated number of 120 participants.

Non-discriminatory measures for sexual equality

1. **Breastfeeding Rooms** : Breastfeeding rooms have been set up in four places, including 203 Administration Building, 303 Administration Building, 311 School of Law, 425 School of Management, and the first floor of the Sports, Wellness and Leisure Building since 2012, and are maintained and cleaned on a regular basis in accordance with the University's "Breastfeeding Room Usage and Management Guidelines". Parking spaces for pregnant women and children under 6 years of age are also provided in each College for staff and students to park nearby during pregnancy and breastfeeding, or for use by guests from outside the school. There are also 29 gender-friendly toilets.

2. **Automated External Defibrillator (AED)** : There are currently 9 AEDs on campus to promote first aid education and training for faculty-staff and students. In addition to organizing the "CPR+AED First Aid Promotion Activity" every year for all freshmen of the university during the Freshmen Week, the campus also organizes relevant injury and illness management courses for all teachers and students.

▶ **AED locations**

2.5 Academic and Integrity Ethics

2.5.1 Faculty and Academic Ethics

1. In response to the "Principles for Handling Academic Ethics Cases in Colleges and Universities", "Principles for Handling Violations of Teacher Qualification Requirements by Teachers in Colleges and Universities", and the "Key Points for Handling and Deliberation of Academic Ethics Cases in the National Science and Technology Council", the University has formulated the "Rules for Handling Academic Ethics Cases of Teachers and Researchers" and "Key Points for Handling Academic Ethics Cases of Researchers in the Project" to establish an objective and fair process for handling academic ethics cases involving teachers and researchers and establish a mechanism for academic self-discipline. Two cases involving the qualifications of faculty who had been sent for review were handled during the 2019-2022 academic year, with no violation of the qualifications of teachers found.

2. In order to establish a mechanism for academic ethics, the "Academic Ethics Implementation Regulations" have been formulated, which stipulates that project directors applying for a MOST project for the first time, and the participating researchers listed in the application for the first-time execution of the MOST project should complete at least six hours of training in academic ethics education courses within three years prior to the date of the application for the research project. Participating researchers who are hired for the first time to carry out the MOST project after the start of the project should complete six hours of training in academic ethics education courses within three months from the start date of the project.
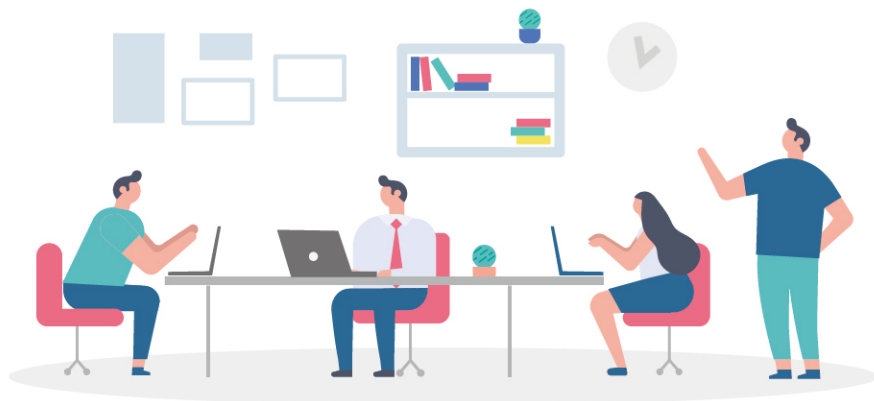
2.5.2 Anti-corruption Policies

1. Through various meetings and channels, the school publicizes Civil Servant Work Act, the Service Guidelines for Civil Servants, Anti-Corruption Act and other relevant regulations, and reiterates that civil servants should perform their duties impartially in accordance with the law, and should not use the powers, methods or opportunities of their duties to obtain unlawful benefits for themselves or for a third party, so as to enhance the image of honesty and integrity.

2. Before the three festivals, the school will promote the observance of the "Code of Ethics for Civil Servants" and the "Code of Ethics for Civil Servants and Teachers of the Ministry of Education and Its Affiliated Institutions and Schools". In case of any gifts or entertainment offered by those who have an interest in the school's duties, the company will refuse or return the gifts or entertainment.

3. Set up a special area for disclosure of conflict of interest and avoidance of identity on the website of the NUK Personnel Office to publicize the regulations related to administrative neutrality and avoidance of interest of civil servants for the reference of faculty and staff, and to implement the declaration of civil servants' properties.

▼ List of Laws and Regulations to be Observed by Each Personnel Category

Category	Applicable Laws and Regulations
Teacher	Teachers' Act, Rules for Handling Part-Time Teachers with Administrative Duties in National Schools at All Levels, Principles for Handling Part-Time Teachers in Public Schools at All Levels, Principles for Handling Academic Ethics Cases in Schools Above the Colleges and Colleges, Essentials for Handling and Deliberation of Academic Ethics Cases in the National Science and Technology Council, Rules for Deliberation of Academic Ethics Cases in NUK, Essentials for Handling Academic Ethics Cases of Researchers in the Projects.
Civil servant, technician, worker	Public Functionaries Discipline Act, Public Functionary Service Act, Act on Administrative Neutrality of Civil Servants, Act on Avoidance of Conflicts of Interests of Civil Servants, Act on Property-Declaration by Public Servants, Code of Practice for the Civil Service, Code of Ethics on Civil Service Integrity, and Anti-Corruption Act.
Hired personnel by School Affairs Fund	NUK's Employment Practices for Administrative Assistants, Measures for Employment and Management of NUK Personnel, NUK Work Regulations for Staff Employed.

2.6 Stakeholder Communication and Involvement

In accordance with Article 39 of the University Act and Article 27 of the Enforcement Regulations, the University takes the initiative to disclose information about its affairs and utilizes multiple channels to increase participation and interaction with its stakeholders. Individuals or organizations that have a direct or indirect impact on the university include students, faculty, staff, alumni, parents, communities, businesses, and NGOs.

1. Participation of our Interactors in School Governance and Feedback Mechanisms:

▼ Participation of school stakeholders in the governance and feedback mechanism of the school

Stakeholders	Concerned issues	Communication methods	Frequencies
Students	● Campus safety ● Learning resource ● Learning outcome ● Fairness and no discrimination learning environment ● Employment opportunities ● Ecology conservation ● Green and beautify the campus	Student forum	Every school year
		Student association of department and club leader meeting	8/year
		Talk between the school and clubs	2/year
		Dorm student meeting	4/year
		Meeting with representatives of graduates	4/year
		Public affair mailbox of each unit	Irregular
		Webpage "I have sth to say"	Irregular
Teachers	● Teaching and research environment ● Training Examination ● Teacher promotion ● Employee welfare ● Employee insurance ● Campus safety	Guidance knowledge and capability workshop for teachers	15-22/year
		New teacher forum and "teacher experience passing system"	2/year
		Public hearing	Irregular
		Teaching skill enhancement workshop for teachers	Irregular
		Public affair mailbox of each unit	Irregular
Staff	● Education training ● Examination and promotion ● Employee Welfare ● Employee Insurance ● Campus Safety	Human resource service message	Every month
		Management and labor meeting	Every season
		Teachers and saff forum	Every year
		Public affair mailbox of each unit	Irregular

Stakeholders	Concerned issues	Communication methods	Frequencies
Alumni	● Opportunities for going back to school to take advanced studies ● Sustainable learning ● School (Department) Alumni Association	School anniversary	Each year
		Department alumni association	Irregular
		Managing and executive director Meeting of school alumni association	Every 3 months
		Public affair mailbox of each unit	Irregular
Parents & community people	● Students' learning resources ● Students' learning outcome ● Campus governance ● Employment opportunity ● Industry-Academia cooperation ● School reputation ● Ecology conservation ● Green and beautify campus	Parents Forum	Each school year
		Prompt response system for opinions	Irregular
		Public affair mailbox of each unit	Irregular
Enterprises	● Student quality ● Practical Capability ● Industry-Academia Cooperation ● Research and Development Energy	Contract ceremony	Irregular
		Industry-Academia matching meeting, Industry-Academia exchange meeting, enterprise seminar	Irregular
		Other enterprise involved activities	Irregular
		Industrial cluster alliance meeting	Irregular
		Public affair mailbox of each unit	Irregular
NGOs	● Campus governance ● School reputation ● Ecology conservation ● Green and beautify campus	Contract ceremony, seminar, member meeting	Irregular
		Public affair mailbox of each unit	Irregular

2. Communicate and interact with stakeholders on a regular or irregular basis through various channels

Channel	Update frequency	Result
School Information Disclosure	Yearly	Disclosure of five major areas of information: explanation of school affairs, analysis of financial information, explanation of tuition and fees, other important information of the school, and the status of the school's internal management.
Social Media Fan Specialization	2-4 times per week	• Facebook Fan Page from 6/3/2012 • YouTube Channel from April 27, 2012 • Instagram Interacting since August 9, 2018 • Opening & graduation ceremonies during the outbreak were broadcast live on social media.
NUK e-newsletter	Twice per month	Since its inception on March 13, 2013, it has been published on the 2nd & 4th week of each month, and as of December 2022, 235 issues have been published.
NUK Fundraising Newsletter	Quarterly	The newsletter was launched on April 13, 2022, and is published in the first month of each quarter. Interactors are regularly informed of the utilization of the funds. Interactors can also make donations through the newsletter by clicking the "Online Donation" button or by contacting us through the dedicated hotline.
Media	2-3 times per week	The school's key messages are published in the mass media. 129, 186, 191, and 180 news items were published during 2019-2022, and 1,111, 1,771, 2,332, and 2,917 news items were published by the mass media.

▲ Communicate and interact with stakeholders on a regular or irregular basis through various channels

YouTube   Facebook   Instagram
118,138   689,339   44,941 2021/4/13 beginning
Total reach statistics
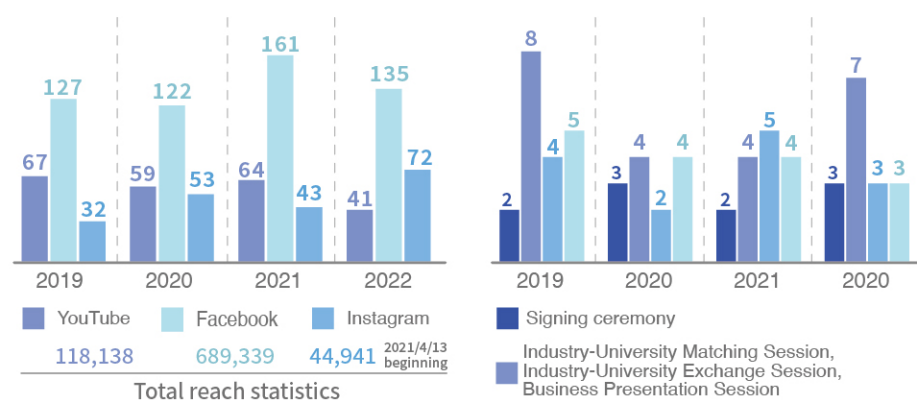
▲ NUK's social media posts and total reach statistics in the past four years

Signing ceremony

Industry-University Matching Session, Industry-University Exchange Session, Business Presentation Session

Other Enterprise Participation Activity

Industry Cluster Alliance Meeting

▲ tatistics on Exchanges & Interactions between the University and Enterprises

3. Application and Implementation of Feedback from Interacting Parties

A. Application and implementation of the feedback from interactions with related parties at various meetings: In the following meeting, each unit will report on the status of each resolution to ensure that the opinions of the interacting parties are taken into account and dealt with appropriately.

B. Application and implementation of feedback from interactive stakeholders in the mailboxes and social media. The school continuously interacts with its interactions by posting information on school affairs on the University website "Feedback Mailbox" as well as on Facebook, YouTube, and Instagram. The school attaches great importance to the opinions of the interactions, and the school's personnel will refer the opinions to the various business management units for appropriate handling and response, and the opinions will also be fed back as important references for school affairs research, forming a link and smooth flow of school affairs governance, management, information, and research. In addition, the university interacts positively with its stakeholders in social media. According to the Facebook fan page insight report, the average response time of the university was about 17 hours, and the university received a score of 4.7 out of 5.
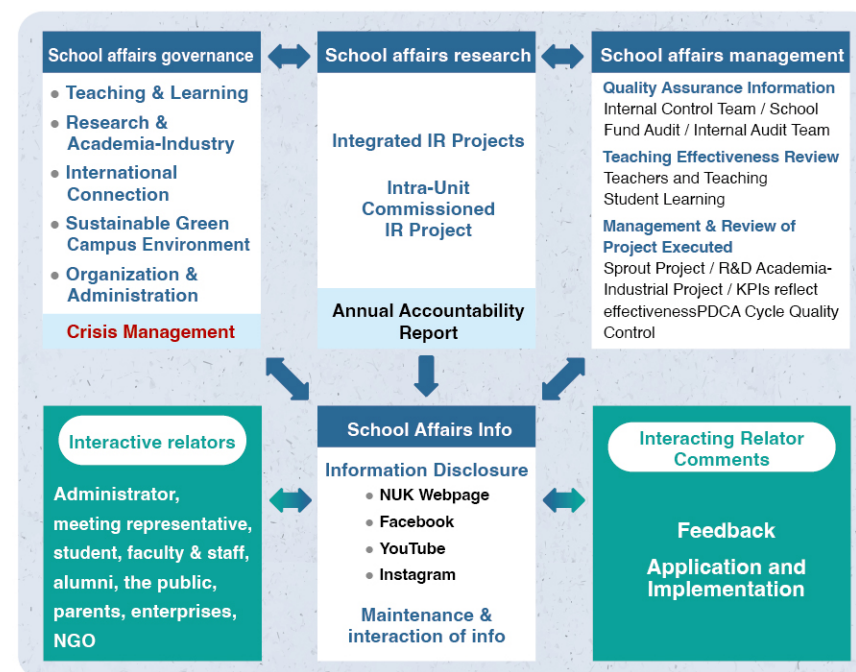
▲ Link & flow of school affairs governance, management, information, and research

2.7 Identification of Key Issues and Boundaries

Based on the definition of "individuals or organizations that have a direct or indirect impact on the school", the University has identified seven categories of stakeholders and collected a list of relevant sustainability issues through representatives of the school council, department head consensus camps, and internal faculty and staff seminars, and then conducted an analysis of the significance of the issues in accordance with the GRI criteria, stakeholder concern survey, and the assessment of the degree of impact on the organization by the first- and second-level administrators in the school. We also analyzed the significance of the issues, and incorporated the important development plans of the school, such as the Mid-Term School Development Plan and the Higher Education Sprout Project, as well as the opinions provided by the reviewers of the sustainability report. After many discussions, X key issues were approved as the principles for the disclosure of information and the planning of strategies and policies for sustainable development of the school. The steps for implementation are described below:

Collecting Sustainable Topics

After identifying the seven major categories of stakeholders, and taking into account the disclosure items of the GRI criteria published by the Global Reporting Initiative, the objectives of school development, the objectives of the Ministry of Education's higher education policy, and the feedback from school councils, department heads' consensus camps, and internal faculty and staff seminars, a list of 28 issues in four major areas have been compiled, namely, school operations, teaching and learning, and the campus environment and social inclusion.

Analysis of the significance of the topic

Conducting surveys on the level of concern of various stakeholders and evaluating the degree of impact on the organization by first- and second-level administrators on campus, and conducting an analysis of the significance of the topics, based on which a matrix of significant issues was drawn to determine the boundaries of disclosure in this report.

Identification of Critical Topics

Based on the results of the materiality matrix analysis, X critical topics have been approved as the basis for the University's sustainability information disclosure and sustainable development strategy and policy planning.

Disclosure and Response

Disclosure of sustainability information in this report and on the University website in accordance with the GRI guidelines, and regular review and improvement of the effectiveness of the policy in response to the expectations of stakeholders.

▲ NUK Sustainability Goal Setting and Strategic Development Process

2.7.1 Boundary Analysis of Critical Topics

After identifying the significant topics disclosed in this report, the scope of entities from which information was collected for each significant topic was categorized as inside and outside the organization: inside the organization was NUK itself, covering students, faculty, and staff; and outside the organization was parents and community members, alumni, partner schools, business partners, enterprises, government agencies, and non-governmental organizations (NGOs).

High

Attention level of stakeholders

B05. Students' Physical and Mental Health
B06. International Exchange
B09. Academic Ethics
C04. Campus Safety

B01. Teaching Quality
C06. COVID-19 Prevention Measures
D03. Campus Open Space

B02. Quality and Quantity of Academic Research
B03. Learning Effectiveness
B07. Teaching Software & Hardware Facilities
B08. Career Planning and University-Industry Cooperation
D04. University Social Responsibility

A03. Information Security
A07. Stakeholder Communication

A05. Protection of Staff Rights & Benefits
A06. Education & Training

A08. Occupational Safety & Health for Laborers
B04. Extracurricular Activities
C03. Ecological Protection & Greening

C05. Waste Management

A01. Operation Structure Adjustment
A02. Financial control
C01. Energy Resource Management
C02. Green Procurement

D01. Volunteers & Social Care Services
D02. Feedback Mechanism for Public Opinion
D05. Alumni Networking & Interaction

A04. Procurement & Vendor Management

Low — Impact level to the organization → High

▲ NUK Major Topics Matrix 2023

2.7.2 Sustainability Strategy and Management Approach

The University's School Affairs Development Plan is based on the practice of social responsibility and public nature of higher education. Internally, the University takes the local interpretation of SDGs as the core driving force, and continues to refine the realization of key goals and institutional improvement, and externally, it connects with a strategic alliance of local government and universities, as well as with international partners, e.g., universities in Southeast Asia, to jointly interpret the concepts of SDGs, USR, and ESG. The Mid-Term School Affairs Development Plan for the period of 2018-2022 has been narrowed down to five major strategies. The plan is based on five strategic goals and twenty action plans of Sprout Project, and is implemented in the spirit of self-accountability (PDCA), in order to achieve the goal of sustainable development of the university.

The five strategic development goals of the 2018-2022 medium-term School Affairs Development Plan are as follows:

1. In terms of teaching and learning, take the five major mobilities of students as the basis for cultivating students' competitiveness, expand learning freedom, and strengthen students' core competencies, encourage teachers to innovate in teaching and actively participate in teaching practice research, in order to pursue excellence in teaching and promote the integration of learning and application.

2. In terms of research and industry-academia oriented, make good use of the advantages of industrial location and coordinate with the national development policy to promote strategic alliance with the local industry, government and academia, emphasizing USR's integration with the emerging technologies and the co-construction of the university social responsibility.

3. In terms of campus facilities and environment, through improving campus facilities and environment, practice green university and provide students with diverse learning domain

4. In terms of international convergence, use SDGs as an international common language to reflect the internationalization of "university social responsibility".

5. in terms of organization and administration, act through the improvement of laws and regulations to achieve sustainable management and implement the publicity of higher education.

▼ **Key Topics and Management Approaches - Teaching and Learning**

Goal	Pursue excellence in teaching and learning, and strive for integration of learning and using and helping the underprivileged.
Policy & Commitment	Promote curriculum reform, strengthen practical and integrated curricula, facilitate teachers' innovative teaching, develop cross-disciplinary integrated courses/programs, and strengthen the connection between the curriculum and the industry, so as to effectively enhance students' competitiveness in employment and professional English proficiency.
Key Topic	B01.Teaching Quality, B02.Quality and Quantity of Academic Research, B03.Learning Effectiveness, B04.Extracurricular Activities, B05.Students' Physical and Mental Health, B06.International Exchanges, B07.Teaching Hardware and Software Facilities, B08.Career Planning and University-Industry Cooperation, B09.Academic Ethics, D04. University Social Responsibility
Corresponding SDGs	3 GOOD HEALTH AND WELL-BEING / 4 QUALITY EDUCATION / 8 DECENT WORK AND ECONOMIC GROWTH / 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE / 10 REDUCED INEQUALITIES / 11 SUSTAINABLE CITIES AND COMMUNITIES / 12 RESPONSIBLE CONSUMPTION AND PRODUCTION / 16 PEACE, JUSTICE AND STRONG INSTITUTIONS / 17 PARTNERSHIPS FOR THE GOALS

Responsibility	Academic Affairs Office / Student Affairs Office / International Office / R&D Office / Teaching Development Center / English Teaching Resource Center / Shool Affairs Research Office / Colleges / General Education Center / Language Center / Personnel Office
Sprout Action / Present Action	1-1 Adaptation and Autonomy in Data Science-Induced Learning 1-2 Humanities and Science and Technology Interdisciplinary Professional Narratives 1-3 Innovation and Entrepreneurship Capacity Base in IF School 1-4 Interdisciplinary and Prospective Specialized Talents 1-5 Teachers' Innovative Teaching Practices, Research, and Diversified Promotion 3-1 Comprehensive Assistance for Economically or Culturally Underprivileged Students 3-2 Building Partnerships and Driving Co-creation of Resource on Campus and Beyond
Significant Results, 2022	1. Establish the first XR School to cultivate somatosensory technology talents. 2. Dept. of Athletic Performance set up Football Section and PE Office established a football team to cultivate college football talents. 3. Establish EDU Power Certificate in connection with ASE Cultural & Educational Foundation to care for the elementary schools in remote area and to implement ESG. 4. In response to the 108 Curriculum Guidelines, organize a team of science teachers with specialties, and form an alliance with 30 senior high schools in the Kaohsiung area. 5. Assist local senior high schools and Renda Industrial Zone to promote petrochemical industry special classes to promote local education and employment. 6. "Introduction to Light-Emitting Diode Technology" and "Semiconductor Photolithography Process" passed the iCAP quality certification of the Ministry of Labor. 7. Cultivate highly professional talents of Japanese in law, and the average salary of graduates is higher than that of employed lawyers. 8. The ratio of faculty who applied for Teaching Practice Research Program of the Ministry of Education to participate in innovative teaching increased from 18.75% in 2018 to 50.59% in 2022. 9. The number of innovative courses offered by IF School has doubled, and the number of students taking the courses has increased by more than 2.5 folds. 10. Adopt 5 measure to help economically and culturally underprivileged students; the applications for student aid have increased by 3 folds. 11. Amend the measures of "Certificate Incentive Fund" to encourage economically and culturally underprivileged students to obtain a certificate. 12. In 2022, more than 50% of the economically and culturally underprivileged students passed their major professional certificate and cross-field certificate.
Resource	Major recurrent revenue, Higher Education Sprout Project
Grievance mechanism	President's Mailbox, Official Mailboxes of Units, and Student Affairs Seminars
Management Evaluation Mechanism	Regularly track and review the progress of each action plan through the regular business meetings, such as the business meeting of each executive unit, the management evaluation meeting of Sprout Plan, and the administrator's report.
Management Approach Assessment Results	0.4 NUK Sustainability Chart 4.4 Counseling Link System 0.5 Sustainability Chart for Each College 4.5 Student Employment Effectiveness 4.1 Teaching quality & Innovative Teaching 5.4 Sustainable Environmental Education & Citizen Participation 4.2 SDGs Course & Research 6.3 University Social Responsibility 4.3 Student Learning Effectiveness 6.6 Vocational Training & Life-learning Operation
Management Approach Adjustment	1. Internal mechanism: Through the Administrative Meeting, the School Fund Management Committee, the School Affairs Development Committee, and other school-level meetings, adjustments are made to the implementation of projects and school-wide key indicators, and a revised version of the medium-term school development plan is released in the first quarter of each year. 2. Third-party review and feedback mechanism: Through the "Sustainability Report" published annually and certified by a third party, "UI GreenMetric", and "THE World University Impact Rankings (SDGs)" (UK), the University is able to understand the results of the international ratings and the review comments, so as to conduct a rolling review.
Medium-term Development Plan, 2023-2026	1-1-1 Promote diversified and flexible interdisciplinary learning systems and venues 1-1-2 Cultivate Basic and Prospective Specialized Talents 1-1-3 Enhance cross-domain programming capabilities and integration into digital innovation and entrepreneurship 1-1-4 Strengthen the English Learning Support System for Students 1-2-2 Building Teachers' Innovative Capacity for Cross-domain Digital Teaching and Learning 1-2-3 Enhance Teaching Support System 1-3-1 Enrollment system professional optimization, selection of suitable students 1-3-2 A school governance decision-making model based on student learning outcomes 2-1-2 Enhance the integration of industry-university practice 3-3-1 Deepening SDGs literacy 3-3-2 Implement citizen participation in environmental sustainability 4-2-1 Construct EMI to create a bilingual learning environment 4-3-1 Strengthen the sense of identity and connection with the school 4-3-3 Improve learning and education resources

▼ Major Topics and Management Approaches - Research & Academia-Industry

Goal	Encouraging cross-disciplinary research and industry-academia, and co-constructing the university social responsibility.
Policy & Commitment	Capitalizing on the advantages of industrial location and in line with the national development policy, establish relationships with neighboring industries through memorandums of understanding, industry-academia projects, talent cultivation, and technology exchanges, to promote teachers' skills and matchmaking with industries, to enhance the cooperation between teachers and industries, and to increase the energy of research and development, as well as to enable the school to smoothly connect with the country's key industries.
Key Topic	B02. Quality and Quantity of Academic Research, B06. International Exchange, B08. Career Planning and University-Industry Cooperation, B09. Academic Ethics, D04. University Social Responsibility
Corresponding SDGs	
Responsibility	R&D Office / Extension Education Centre / EMBA / Personnel Office / Colleges / General Education Center
Sprout Action / Present Action	1-4 Interdisciplinary and Forward-Looking Specialized Talents 1-5 Research on Teachers' Innovative Teaching Practices and Diversified Promotion 4-1 Improvement of Social Design Practice-oriented Co-education through USR-HUB 4-2 Expanding the spirit of social responsibility of universities through Goal-oriented social practice-oriented competitive programs. 4-3 Deepening the Cooperation Network of Local National Education
Significant Results, 2022	1. Promote the "Resilient City" social practice program, support Kaohsiung City Government to conduct scientific research on disaster prevention and rescue, integrate resources to guide the community in autonomous disaster prevention, and create a resilient community. 2. Implemented three cooperative projects with National University System of Taiwan namely, the "Integrated Cross-Disciplinary Sustainable Research Program," the "Distinctive Field Seminar," and the "Student Laboratory Exchange." 3. In 2022, there were 4 new memorandums of understanding (MOUs) signed with industry, bringing the total number to 25, and the total amount of industry-academia cooperation programs reached over $100 million. 4. Combining the resources for incubating entrepreneurship, the school has nurtured three campus start-ups, which have been honored to participate in three innovations competitions. 5. To cultivate forward-looking R&D teams based on departmental development, including the AI Research Center, the Disaster Prevention and Rescue Research Center, the Health and Bionic Technology Research Center, the Advanced Packaging Integration Technology Center, the Center for Sustainable Living Environment Technology, and the Digital Content Design Research Center. 6. Link the field externally with the community, establish a platform for linking local issues, support the four USR Hub programs, and incubate emerging USR teams through a competitive seed program. 7. The University was honored by the Chinese Institute of Engineers to receive 2022 Outstanding Industry-University Cooperation Unit Award. 8. Prof. Wen-fu Ho of the Dept. Chemical & Material Engineering and his research team were honored with the 19th National Innovation Award - Scholarly Innovation Award. 9. Prof. Yi-zhang Zhong of Chemical & Material Engineering Dept., Prof. Zong-bei Hong of Information Engineering Dept., Prof. Zhi-hong Wu of Electrical Engineering Dept. Prof. Zhao-qiu Yu of Civil & Environmental Engineering co-recognized by NSC "2022 Future Technology Award".
Resource	Major Recurring Revenue, Higher Education Sprout Project Funding, NSC Programs and Industry-Academia Collaboration Funding.
Grievance mechanism	President's Mailbox, Unit Official Mailboxes.
Management Evaluation Mechanism	Regularly track and review the progress of each action plan through regular business meetings, such as the business meeting of each executive unit, the management evaluation meeting of Sprout Project, and the supervisor's report.
Management Approach Assessment Results	2.5 Academic and Integrity Ethics 5.4 Civic Engagement in Sustainable Environmental Education 3.2 Rewards for Outstanding Teachers and Students 4.6 Effectiveness of Sustainable Academic Research 06 Social Inclusion and Placemaking
Management Approach Adjustment	1. Internal mechanism: Through the Administrative Council, the School Fund Management Committee, the School Development Committee, and other school-level meetings, adjustments are made to the implementation of projects and school-wide key indicators, and a revised version of the mid-term school development plan is released in the first quarter of each year. 2. Third-party review and feedback mechanism: Through the "Sustainability Report" published annually and certified by a third party, "UI GreenMetric", and "THE World University Impact Rankings (SDGs)" (UK), the University is able to understand the results of the international ratings and the review comments, so as to conduct a rolling review.
Medium-term Development Plan, 2023-2026	1-2-1: Improving the Multiple Promotion System for Teachers 2-1-1: Optimizing Patent and Technology Transfer Results 2-1-2: Deepening the integration of industry-academia internships 2-2-1: Expanding Green Cross-Domain Technologies 2-2-2: Digital Transformation and Applications 2-3-1: Developing NUK Research Identity 2-3-2: Stimulating the Transfer of R&D Results 3-3-2: Implementing Citizen Participation in Sustainable Environment 4-1-1: Deepening Localization and Establishing a Professional Learning Platform 4-1-2: Assisting Local Industries in Developing ESG 4-1-4: Enhancing the Development of Sports and Athletics

▼ Critical Topics and Management Approach - Campus Facilities and Environment

Goal	Promote spatial planning, create a sustainable environment, and realize a green university.
Policy & Commitment	To uphold the reputation of "Green University", the University is committed to promoting energy saving, carbon reduction and the four -saving plans, and continue to seek budgetary subsidies from government departments to make the campus facilities more environmentally friendly.
Key Topic	A03. Information Security, A08. Occupational Safety and Health for Workers, C01. Energy Resource Management, C03. Ecological Protection and Greening, C05. Campus Safety, C05. Waste Management, C06. COVID-19 Epidemic Prevention Measures, D03. Campus Open Space
Corresponding SDGs	
Responsibility	General Affairs Office / Library
Sprout Action / Present Action	2-2 Expand the University of Sustainable Characteristics
Significant Results, 2022	1. 10 stations with more than 200 U-BIKEs are set up on campus to strengthen the zero-emission vehicle policy. 2. The Student Activities Center was completed in 2022 and received the Green Building Label, Smart Building Label, and the Gold Quality Award for Urban Engineering. 3. Achievement rate of green procurement is over 99%. 4. 4. Complete the replacement of wireless network equipment and network information equipment in the College of Science and the College of Management buildings. 5. Build a campus-wide vulnerability management platform to effectively manage the vulnerability distribution and remediation of the information systems of all units on campus. 6. Complete the introduction of the information security management system to the whole campus. 7. Complete the expansion of the green energy server room in the Library and Information Building to provide centralized management of the campus-wide information and communication system in order to achieve the goal of energy conservation and carbon reduction on campus.
Resource	Major Recurring Revenues, Higher Education Sprout Project Funds, MOE Subsidized Project Funds, School Operating Funds.
Grievance mechanism	President's mailbox, each unit's official mailbox, repair report system, school security hotline, information security incident report mailbox.
Management Evaluation Mechanism	The progress of each action plan is routinely tracked and reviewed through various business meetings, such as the business meeting of each administrative unit, the management evaluation meeting of Spout Project, and the supervisor's report.
Management Approach Assessment Results	1.3 Information Security and Campus Safety Maintenance 1.4 Gender Equity and Health Infrastructure 05 Sustainable Environmental Performance
Management Approach Adjustment	1. Internal mechanism: Through the Administrative Council, the School Fund Management Committee, the School Development Committee, and other school-level meetings, adjustments are made to the implementation of projects and school-wide key indicators, and a revised version of the mid-term school development plan is released in the first quarter of each year. 2. Third-party review and feedback mechanism: Through the "Sustainability Report" published annually and certified by a third party, "UI GreenMetric", and "THE World University Impact Rankings (SDGs)" (UK), the University is able to understand the results of the international ratings and the review comments, so as to conduct a rolling review.
Medium-term Development Plan, 2023-2026	3-1-1: Campus Carbon Inventory 3-1-2: Campus Climate Action 3-1-3: Enhance Sustainable Supply Chain 3-2-1: Build a Smart Campus 3-2-2: Expand Library E-Resources 3-2-3: Strengthen Network Infrastructure and Campus Information Security 3-3-2: Implement Civic Engagement for Sustainable Environment 4-1-3: Create an Environment for Community Learning of Quality Libraries

Goal	Expand our horizons, enhance our international competitiveness, and connect with the world with SDGs.
Policy & Commitment	Enhance our profile and internationalization through specific strategies such as increasing the number of exchange students and the number of contracts with sister schools.
Key Topic	B07.International Exchange, D05.University Social Responsibility
Corresponding SDGs	4 QUALITY EDUCATION 17 PARTNERSHIPS FOR THE GOALS
Responsibility	International Office / English Teaching Resource Center / General Education Center / Language Center
Sprout Action / Present Action	2-1 Improve International College Characteristics Enrollment 2-2 Expand NUK with Sustainable Characteristics 2-3 Cultivate SDGs Dialogue Practitioners 4-2 Diffuse the Spirit of University Social Responsibility through Goal-oriented Competitive Social Practice Programs
Significant Results, 2022	1. The number of international sister schools reaches 350, including 309 in Asia, 21 in Europe, 17 in America and 3 in Oceania, and NUK has signed a joint dual-degree with 7 sister schools, with a total of 12 double-joint degrees. 2. Establish a Medan office to increase the number of sister schools and Indonesian students, and develop opportunities for local internships, study abroad and exchanges. 3. The establishment of the Asia Virtual Academy has opened up a new model of academic exchange that is transnational, cross-cultural, and cross-field in the post-pandemic era. 4. NUK organized the International Youth Sustainable Leadership Camp, held SDGs creative proposal competitions with Indonesian, Indian and National Philippine University and National Taiwan University systems, and produced 22 proposals. 5. NUK has cooperated with International Climate Development Institute (ICDI) to hold Climate Action Sustainability Special Exhibition, and presented the results in Belmont ABRESO, Sustainable City Forum, Campus Environmental Education, Resilient City, and Climate Sustainability Courses.
Resource	Major recurrent revenue, Higher Education Sprout Project.
Grievance mechanism	President's Mailbox, Official Mailboxes of Units.
Management Evaluation Mechanism	Regularly track and review the progress of each action plan through the regular business meetings, such as the business meeting of each executive unit, the management evaluation meeting of Sprout Plan, and the administrator's report.
Management Approach Assessment Results	5.2 Energy and Climate Action 6.1 Social Co-Prosperity Strategy and Goal (USR) 6.5 International Exchange and Partnerships
Management Approach Adjustment	1. Internal mechanism: Through the Administrative Meeting, the School Fund Management Committee, the School Affairs Development Committee, and other school-level meetings, adjustments are made to the implementation of projects and school-wide key indicators, and a revised version of the medium-term school development plan is released in the first quarter of each year. 2. Third-party review and feedback mechanism: Through the "Sustainability Report" published annually and certified by a third party, "UI GreenMetric", and "THE World University Impact Rankings (SDGs)" (UK), the University is able to understand the results of the international ratings and the review comments, so as to conduct a rolling review.
Medium-term Development Plan, 2023-2026	4-2-1：Construct EMI to create a bilingual learning environment 4-2-2: Completion of the International College Distinctive Interdisciplinary and College EMI Programs 4-2-3: International Links with SDGs as the Main Axis 4-2-4: Training of SDGs Campus Ambassadors to Promote Community Service at Home and Abroad

Goal	Establish sustainable management, unite the solidarity of alumni, and implement the public nature of higher education.
Policy & Commitment	Improve the organizational structure, improve the welfare of faculty and staff, and improve the satisfaction of graduates from all walks of life.
Key Topic	A01. Operational structure adjustment, A02. Financial control, A07. Stakeholder communication, A08. Labor occupational safety and health, C06. COVID-19 Epidemic prevention measures
Corresponding SDGs	1 NO POVERTY 4 QUALITY EDUCATION 8 DECENT WORK AND ECONOMIC GROWTH 10 REDUCED INEQUALITIES 16 PEACE, JUSTICE AND STRONG INSTITUTIONS 17 PARTNERSHIPS FOR THE GOALS
Responsibility	Student Affairs Office / International Office / Secretariat / Accounting Office / Personnel Office
Sprout Action / Present Action	2-2 Expand NUK with Sustainable Characteristics 3-3 School Research Governance and Information Disclosure
Significant Results, 2022	1. NUK won three gold and one silver awards in sustainability report category in Taiwan Sustainable Investment Forum for four consecutive years from 2019 to 2022. 2. In THE Impact Rankings 2022, our performance in SDG 12 (Responsible Consumption and Production) ranks the first among universities in Kaohsiung and Pin-tung area. 3. NUK is ranked the most favorable by enterprises among the mid-sized public universities in the survey by Cheers. 4. In response to the policy of Taiwan Net Zero Emissions 2050, NUK has planned 6 aspects of action: Green University, Campus Carbon Neutrality, Low Carbon Transportation, Green Building, Zero Waste Low Carbon Diet, and Citizen Participation. The general direction, and joined hands with the NUK has also worked with ICDI to hold Climate Action Sustainability Exhibition to showcase the cooperation results. 5. The amount of funds raised for underprivileged students reached $1,656,000, an increase of 52% over the previous year.
Resource	Major recurrent revenue, Higher Education Sprout Project & Alumni donations.
Grievance mechanism	President's Mailbox, Official Mailboxes of Units, Employees & Management Meeting, Faculty-Staff Seminar.
Management Evaluation Mechanism	Regularly track and review the progress of each action plan through the regular business meetings, such as the business meeting of each executive unit, the management evaluation meeting of Sprout Plan, and the administrator's report.
Management Approach Assessment Results	01 Vision and Strategy for a Sustainable University 6.2 Social Practices within the University 02 Governance and Operation 6.3 University Social Responsibility 03 Human Resource and Financial Planning and Business Performance
Management Approach Adjustment	1. Internal mechanism: Through the Administrative Meeting, the School Fund Management Committee, the School Affairs Development Committee, and other school-level meetings, adjustments are made to the implementation of projects and school-wide key indicators, and a revised version of the medium-term school development plan is released in the first quarter of each year. 2. Third-party review and feedback mechanism: Through the "Sustainability Report" published annually and certified by a third party, "UI GreenMetric", and "THE World University Impact Rankings (SDGs)" (UK), the University is able to understand the results of the international ratings and the review comments, so as to conduct a rolling review.
Medium-term Development Plan, 2023-2026	1-2-1: Improving the Multiple Promotion System for Teachers 1-3-3 Proper allocation of human resources to enhance the financial performance of the School Fund 4-3-1 Strengthen the sense of identity and connection with the school 4-3-2 Fundraising resources to implement SDGs × USR × ESG 4-3-3 Improve learning and education resources

3.1 Human Resource Management

Mechanism & Strategy

- **Manpower Review Team**
- **Improve the faculty-staff selection mechanism**
- **Construct administrative support system for teaching staff**

Implementation and results

Faculty staffing meeting
No. Faculty (incl. project & expertise)

	2019	2020	2021	2022
Full Professor	113	115	117	117
Associate Professor	75	73	72	66
Assistant Professor	46	45	44	44
Lecturer	3	3	3	4

- Full Professor
- Associate Professor
- Assistant Professor
- Lecturer
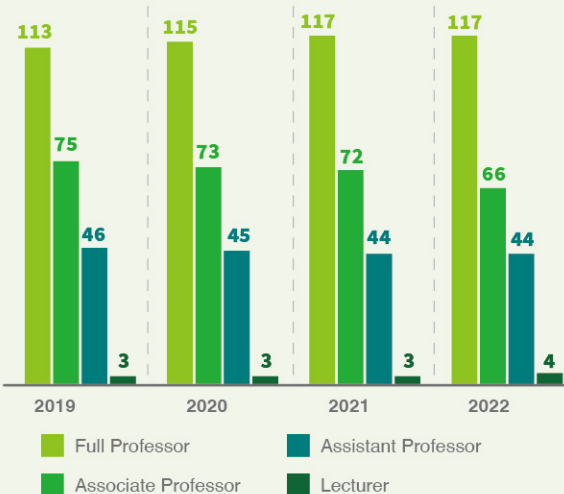
Manpower Review Team
No. Staff of each unit

	2019	2020	2021	2022
Civil servants in administrative units	49	49	46	48
School employees in administrative units	1	0	0	0
Civil servants in the academic units	87	85	85	84
School employees with academic units	47	47	45	43

- Civil servants in administrative units
- School employees in administrative units
- Civil servants in the academic units
- School employees with academic units

Manpower, Finance, Resource support

Human Resource and Financial Planning and Business Performance

3.1.1 Human Resource Management

▼

1. The University's hiring system adheres to the principles of impartiality, transparency, and fairness. It adopts a "dual-track hiring system" that separates faculty and staff. Faculty appointments are reviewed by three levels of faculty affairs councils; staff is hired in accordance with the law.

   A. In order to effectively use the number of faculty and link the departmental development, a teacher staffing meeting is held every semester to hire full-time and part-time teachers; each department conducts public recruitment according to its future development, teacher structure and curriculum planning, and the field of expertise of the teachers, appropriate talents are hired after deliberation and approval by the three-level faculty review committee of the department, institute, college, and school, to strengthen the quality of teaching and research personnel, and to meet the needs of school development and curriculum diversity.

   B. In response to the trend of diversified development of the school and to enhance the effective use of manpower, a manpower review team has been set up to carry out manpower evaluation and other related matters. By taking into account the business attributes of each unit, the most suitable professionals are selected through the "two-stage" selection process of written tests and interviews.

▼ Faculty Statistics 2022

	Full-time Faculty (incl. project & expertise)	Ratio	Part-time faculty	Ratio	Total	Ratio
Full Professor	117	50.65%	12	6.32%	129	30.64%
Associate Professor	66	28.57%	11	5.79%	77	18.29%
Assistant Professor	44	19.05%	81	42.63%	125	29.69%
Lecturer	4	1.73%	86	45.26%	90	21.38%
Total	**231**	100%	**190**	100%	**421**	100%

▼ Staff Statistics 2022

	Male	Ratio	Female	Ratio	Total	Ratio
Civil servant	21	42.86%	27	20.15%	48	26.23%
Rare scientific and technical personnel	1	2.04%	1	0.75%	2	1.09%
Military teacher	0	0.00%	1	0.75%	1	0.55%
Security Guard	2	4.08%	0	0.00%	2	1.09%
Technician & worker	2	4.08%	1	0.75%	3	1.64%
School employee	23	46.94%	104	77.61%	127	69.40%
Total	**49**	100%	**134**	100%	**183**	100%

2. In order to implement human resources management, statistics on new recruits and departures in 2022, and gender distribution of full-time teachers (including the contracted ones with projects and expertise) for the purpose of implementing the Government's gender mainstreaming policy.

   Most of the new recruits were to replace those who are retired or leaving; most of the departed staff are retired, or have other jobs, family reasons, career planning, and expiration of contract; in terms of their job titles, the majority of is employed by the University, and most of them are leaving due to career planning.

Full-time Employee Intake Rates   Full-time Staff Turnover Rates

▼ List of Full-time Employee Intake & Staff Turnover Rates 2022

(Each age-group column has two sub-columns: the first = Full-time Employee Intake, the second = Full-time Staff Turnover)

		21~30 Intake	21~30 Turnover	31~40 Intake	31~40 Turnover	41~50 Intake	41~50 Turnover	51~60 Intake	51~60 Turnover	61 ↑ Intake	61 ↑ Turnover	Total Intake	Total Turnover	Ratio Intake	Ratio Turnover
Full-time faculty	M	0	0	0	1	2	2	0	1	0	5	2	9	5.71%	22.5%
	F	0	0	3	0	0	2	0	0	0	0	3	2	8.57%	5%
Civil servant	M	0	0	0	0	1	1	0	0	0	0	1	1	2.86%	2.5%
	F	1	0	1	0	1	0	2	2	0	1	5	3	14.29%	7.5%
Project hired	M	0	0	0	0	1	0	0	0	0	0	1	0	2.86%	0%
	F	0	0	0	0	0	0	0	0	0	0	0	0	0%	0%
University hired	M	1	2	2	3	0	0	1	1	0	1	4	7	11.43%	17.5%
	F	7	8	5	3	6	7	1	0	0	0	19	18	54.29%	45%
Total	Total	9	10	11	7	11	12	4	4	0	7	35	40		
	Ratio	25.71%	25%	31.43%	17.5%	31.43%	30%	11.43%	10%		17.5%	100%	100%		

Note : 1. New entrants rate by gender = number of new entrants by gender / total number of entrants by gender at the end of the year
2. Turnover rate by gender = number of departures by gender/total number of departures by gender at the end of the year

3. The largest number of teachers are full professors, with the number of males exceeding the number of females, followed by associate professors, with the number of females exceeding the number of males, and most of the female teachers are associate professors or above.

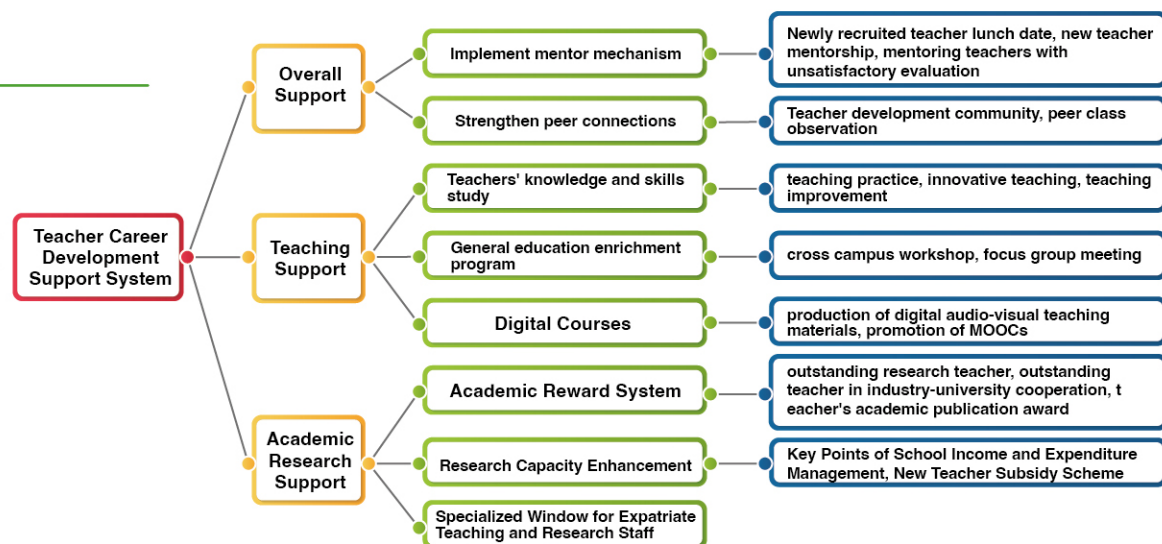▼ Full-time faculty (incl. expertise & project) gender statistics

	Male	Ratio	Female	Ratio	Total	Ratio
Full Professor	95	74.80%	22	21.15%	117	50.65%
Associate Professor	20	15.75%	46	44.23%	66	28.57%
Assistant Professor	12	9.45%	32	30.77%	44	19.05%
Lecturer	0	0.00%	4	3.85%	4	1.73%
Total	**127**	100%	**104**	100%	**231**	100%

4. There are 88 part-time teachers in the General Education Center in 2021 and 90 part-time teachers in 2022. The selection and appointment systems are based on the NUK Teacher Appointment Methods to formulate the "General Education Center Teacher Appointment Review Points" and follow the school's regulations. The employment process is carried out in order to appoint teachers with academic expertise. Part-time teachers are exempted from the external review of their works, except for those who hire teachers of equivalent grades based on their degree or have obtained the same level certificate from the Ministry of Education. The rest of the recruitment procedures are the same as that of full-time teachers.

3.1.2 Teacher and Staff Training

Teacher training

For teachers, in order to enhance their professional knowledge in teaching and to improve the career development support system for teachers, the University not only organizes advanced study for teachers, but also improves the mechanism for multiple promotion, reward and evaluation feedback for teachers. In addition, in order to ensure the quality of academic products and to enhance the academic integrity of teachers and students, it continues to improve the academic ethics mechanism and procedures. Finally, administrative support is provided to facilitate teachers' performance in teaching, scholarship, and service. The support system for teachers' career development in the areas of teaching, research, and service, is shown in the following diagram.

1. Develop an exchange platform for teachers to share and pass on their teaching and academic experiences.

   A. Implementation of the mentoring mechanism for teachers: The Teacher Mentoring System was implemented to encourage senior teachers to pass on their experience and mentor new or peer faculty. In 2019-2022, a total of 20 mentoring sessions were organized for new faculty and three faculty members with unsatisfactory evaluations; in 2019-2022, a total of eight exchange sessions for new teachers were organized to enable them to learn about teaching and learning administration as well as the campus culture.

   B. Strengthen peer connections: Encourage teachers to form growth communities for the purpose of teaching innovation, cross-disciplinary teaching or research. During the period of 2019-2022, a total of 67 groups were organized, with 122 public activities; develop a peer class observation system, improve the teaching observation mechanism, and enhance the quality of teaching. The participation rate of full-time teachers in 2022 reached 30.4%, which is an increase of 13.1% compared to 2019. In 2022, the participation rate of full-time teachers reached 30.4%, an increase of 13.1% from 2019, and in 2019-2022, a total of 105 courses were opened for class observation, with a total of 134 participants.

▲ Teacher Career Development Support System

	2019	2020	2021	2022	2023
No. community	12	20	21	14	13
No. CMTY related to teaching practice and research	-	7	1	2	1
No. participants	67	127	122	84	72
No. full-time faculty	65	114	113	77	69
No. adjunct faculty	0	6	3	3	0
No. intercollegiate teachers	2	5	6	4	2
Others	0	2	0	0	1
No. public activities	30	33	28	31	-

▲ Number of Teacher Growth Community Participants 2019-2022

▼ No. class observation participating faculty 2019-2022

	2019	2020	2021	2022
Full-time faculty/Ratio	41(98%)	55(96.5%)	64(92.8%)	72(100%)
Adjunct faculty/Ratio	1(2%)	2(3.5%)	4(5.8%)	0(0%)
Others/Ratio	0(0%)	0(0%)	1(1.4%)	0(0%)
FT faculty participation ratio	17.3%	23.2%	27.0%	30.4%
No. courses for observation	18	36	26	25

2. Promoting innovative and advanced learning for faculty to enhance their pedagogical competence.

   A. Organize faculty learning and training: deepen teachers' professional knowledge in curriculum design, teaching research methodology, project and paper writing, and research ethics; counsel faculty to conduct research on teaching practices; and strive for and integrate external resources. 31 sessions were held in 2019-2022, with a total of 457 participants.

   B. Faculty's Innovative Teaching and Advanced Learning: Planning innovative teaching and digital training courses, with a total of 56 workshops and 1,029 participants in 2019-2022, including the Power E three-school joint teacher training program in August 2021, which included online synchronous teaching and online curatorial exhibitions, with a total of 60 participants.

   C. Promote general education teaching and enrichment: Promote keynote speeches and workshops for faculty in various fields. In 2019-2022, 35 keynote speeches and workshops for teachers in various fields were held, with a total of 930 participants, and Taiwan Congress on College General Education co-hosted "2023 International Symposium on Sustainability in General Education, Medicine and Humanities, and STEAM Education" in June 2023.

   D. Develop the integration of digital technology into teaching: In accordance with the "Key Points for Digital Audio-visual Teaching Material Production Subsidies" and the "Key Points for the Implementation of MOOCs Courses," administrative resources were provided to encourage teachers to design digital courses, and the number of MOOCs course electees in 2019-2022 reached 16,582; the number of teachers participating in the digital courses reached 51, and the number of on-campus viewers of the digital courses reached 27,475 in 2019-2022.


◀ Organize seminars on topics related to teaching practice 2019-2022
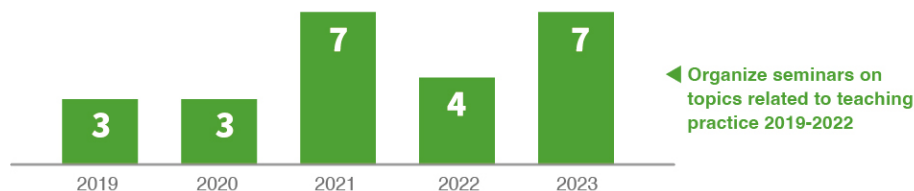
▼ Organization of Teachers' Workshops 2019-2022

	Fall, 2019	Spring, 2019	Fall, 2020	Spring, 2020	Fall, 2021	Spring, 2021	Fall, 2022	Spring, 2022
Keynote Speeches + Teaching Workshops for Teachers of Various Fields (Sessions)	1 + 4	Suspension	1 + 4	1 + 4	1 + 4	1 + 4	1 + 4	2 + 3
Keynote Speeches + Teaching Workshops for Teachers of Various Fields (Participant)	139	Suspension	132	110	149	146	147	107

Staff Training

Encourage civil servants, school employees, technicians, workers, and rare scientific and technological personnel to increase their professional knowledge by 20 hours of education per year.

1. In line with current policies and business needs, the University organizes a number of trainings for faculty and staff, such as "Information Security Training" and "ODF-Open Document Format", to enhance the work functions of colleagues and to improve work efficiency through the introduction of tools and software. Annual digital learning seminars were held, e.g., "Environmental Education" and "Values of Democratic Governance" which includes topics on gender mainstreaming, integrity and service ethics, human rights education, administrative neutrality, and multi-ethnicity.

2. In line with job requirements, colleagues are encouraged to enrich their competency, further studies, refine their individual strengths. The University intends to create a system that fits the right person for the right job, as well as provides university-hired staff licenses or professional increments in areas such as engineering, environmental safety, information, consulting, and nursing.
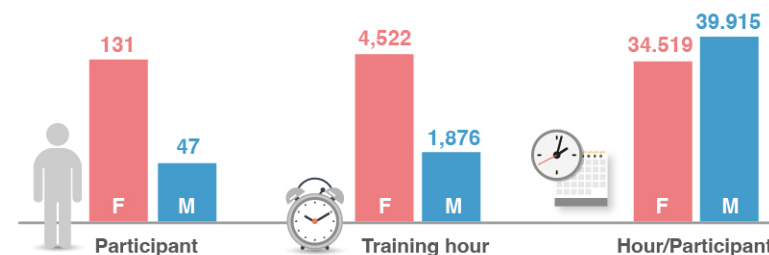
Note: Teacher training is not mandatory and teachers are free to participate in various training programs. Staff members include civil servants, school employees, technicians, workers, and rare technological personnel.

▲ Staff Educational Training

## 3.1.3 Faculty-Staff Welfare, Appraisal and Grievance

Faculty-Staff Welfare

1. Salaries and other benefits of faculty and staff shall be handled in accordance with the Regulations on Teachers' Salaries and Conditions of Service, the Civil Service Pension Act, and the Regulations on the Employment and Management of School Employees of the University; year-end bonuses for civil servants shall be paid in accordance with the Matters Attention to Year-End Bonus Payments for Military and Civil Service Personnel of the Executive Yuan, and the school-employed staff shall be handled in accordance with the regulations for the military and civil service personnel.

2. Faculty and staff members are granted special leave, family care leave, and maternity leave in accordance with the Teachers' Leave Regulations, the Civil Service Leave Regulations, and the Labor Standards Act. Aboriginal faculty and staff may take leave in accordance with the vacation dates announced by the Council of Indigenous Peoples for the annual ceremonies of the indigenous nationalities.

3. In line with the national policy of raising the fertility rate, the faculty and staff of the University may apply for a leave of absence without pay for childcare in accordance with the Gender Equality Act, the Leave of Absence without Pay for Civil Servants, the Leave of Absence without Pay for Educational Personnel, and the Implementation of the Leave of Absence without Pay for Childcare.

4. Faculty and staff over 40 years of age will be subsidized for health checkups every two years, with each subsidy amounting to NT$4,500. In 2022, 41 subsidies will be provided, totaling NT$216,000. In addition, faculty and staff under 40 years of age may apply for sabbatical leave to go for health checkups at their own expense.

5. In conjunction with the Chinese New Year, Women's Day (March 8), and Teacher's Day (September 28), the school organizes various celebratory activities, and actively signs special contracts with stores to provide colleagues with benefits in the areas of food, clothing, housing, and transportation.

	Full-time faculty		University employee	
	M	F	M	F
Estimated No. of persons to be reinstated 2022	0	1	2	4
Actual No. of persons reinstated, 2022	0	1	1	4
Reinstatement rate	No applicant	100%	50%	100%
Actual No. of persons reinstated, 2021	0	0	0	3
No. of persons who have resumed and remained in employment for one year, 2021	0	0	0	2
Retention rate	No applicant	No applicant	No applicant	66.67%

▲ Statistics on the number of persons remaining in employment without pay

Faculty-Staff Evaluation

1. Civil servants shall be subject to regular and year-end appraisals in accordance with the Civil Service Performance Appraisal Act. In accordance with the regulations of the University, new recruits shall be placed on probation first, and regular time and year-end appraisals shall be conducted twice a year. There are provisions that stipulate that the contract of an employee who has been ranked as Grade C or Grade D for two consecutive years shall be terminated, and that an employee who has been late for work, left work early, or has an absenteeism record, or has a poor attitude in dealing with the service of teachers and students, or has not completed 20 hours of life-long learning shall not be ranked as Grade A. The mechanism is designed to review the administrative service and professional competence of the employees.

2. In order to reward excellence and encourage staff morale, the University has established the Staff Reward and Punishment Regulations and the principles of reference for the Staff Audit and Appraisal Committee and the Staff Appraisal Committee of the University to scrutinize the cases of rewards, and has formed the appraisal committees of the civil servants and the university-employed staff to handle the quarterly awards and the end-of-the-year appraisal according to the verification of the work performance.

3. To organize selection activities for outstanding staff and set up points for selecting and rewarding the university-employed staff with outstanding performance. For those who have completed one year of service at the school with outstanding performance, the administrator of the unit will make an initial evaluation, and then, after the first-level units (colleges, offices, library, section, and centers) hold a relevant meeting and approve the evaluation, it will be sent to the School-Employed Staff Evaluation Committee for re-evaluation, and the number of incentives will not be more than 10% of the total number of staff at the school each year, which will depend on the funding increase or decrease, and the winners will be given a public commendation and a NT$20,000 award.
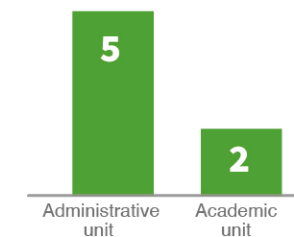
▲ Statistics on the Selection of School-employed Staff with High Achievements 2022

Faculty-Staff Grievances

1. Depending on their status, regular employees are covered by Insurance for Civil Servants and Teachers (including pension reserve) and Labor Insurance (including labor retirement and termination reserve), and are protected by the Teachers' Act, Civil Service Protection Act, and Labor Standards Act, respectively, and may apply for remedies in accordance with the relevant regulations for matters concerning their rights and interests.

2. In order to protect the rights and interests of faculty-staff members and to promote harmony on campus, faculty-staff members who feel that the school's measures concerning them are unlawful or inappropriate and that their rights and interests have been jeopardized may file a complaint or a reply with the school in accordance with the Organization of the Teachers' Grievances Committee or the setup of the Employees' Grievances Committee of the school and the main points of the review.

3.2 Outstanding Teacher Awards

3.2.1 Teacher Incentives

▼

In order to recognize and encourage teachers' efforts and contributions in teaching, research, and social services, the "Regulations for Selection and Reward of Teaching Excellence", "Regulations for the Establishment of Chair Professors" and "Regulations for the Establishment of Distinguished Professors", "Regulations for the Establishment of Teachers' Outstanding Awards for Social Services", and "Regulations for the Selection of Teachers with Excellent Performance in Implementing Higher Education Sprout Project and the Teaching Quality Enhancement Project and for Their Flexible Salary Payment" have been formulated.

▼ Recipients of various teacher awards and the amount of each award

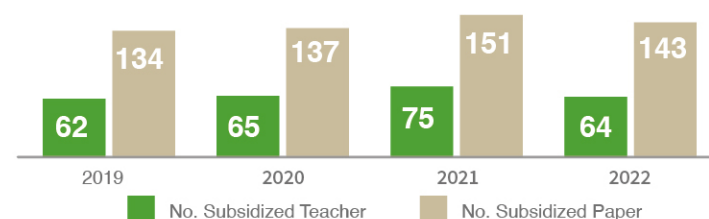|		2020	2021	2022
Teacher of Teaching Excellence	No. Recipient	3	2	3
	Amount ($)	120,000	80,000	120,000
Chair Professor	No. Recipient	1	0	1
	Amount ($)	480,000	0	400,000
Distinguished Professor	No. Recipient	2	2	0
	Amount ($)	8000~12000/monthly	8000~12000/monthly	0
Outstanding social service	No. Recipient	-	-	1
	Amount ($)	-	-	60,000
Excellent project implementation	No. Recipient	12	23	23
	Amount ($)	690,000	1,140,000	1,170,000

3.2.2 Academic and Industry-University Cooperation Awards

▼

Strengthen the support and rewards for teachers' academic research, and improve the mechanism of industry-academia matchmaking.

Establishment of an Academic Reward System for Teachers

1. Establish the "Outstanding Research Teachers Award", "Outstanding Industry-University Cooperation Teachers Award", and "Outstanding Young Scholars Award" to reward teachers with outstanding research and industry-university cooperation results; establish "Key Points for Handling NSCI Subsidized Research Award Support for Universities and Colleges", and applied for research award subsidies from NSCI every year as a flexible salary subsidy for outstanding teachers; establish "Teachers' Academic Publications Award", and allocate funds to award teachers whose academic papers are published in journals included in the seven databases, such as SCI(E), SSCI, and those who have published books and chapters of their special academic fields.

▼ Statistics of Academic Publications Award 2019-2022

	2019	2020	2021	2022
No. Subsidized Teacher	62	65	75	64
No. Subsidized Paper	134	137	151	143

Note: Conference papers and papers not included in the seven indexed databases are not included in this award.

▼ Paper and Monograph Statistics 2019-2022

	2019	2020	2021	2022
R16 - Not included in six databases including SCI	48	48	24	37
R17- Conference paper	244	126	113	127
R18 Monograph (book chapter not included)	19	14	10	22
R19- Exhibition & Performance	7	7	1	0
six databases including SCI	170	170	163	147
Total	**488**	**365**	**311**	**333**

Note: This table contains journal articles from six databases, including SCI(E), and University's database R16-19.

2. The University has consolidated three awards, including the performance awards for each college, "Academic Research and University-Industry Cooperation Award for Outstanding Academic Teaching Units" from R&D Office, and "International Exchange and Cooperation Award for Outstanding Academic Units" from International Affairs Office, and has added the teaching performance of Academic Affairs Office, the evaluation of graduates and employers from Academic Affairs Office, and the related indexes of the "Ministry of Education's School Affairs Data Bank", in order to consolidate them into the "College" and "Departmental" awards for the performance of teaching units. Each year, three departments with outstanding performance are selected and given incentive awards, and are publicly recognized on campus.

3. "Key Points of Budget Allocation for Library Instruments and Equipment" has been formulated. In addition to the capital departmental funds allocated to the colleges and departments in accordance with the regulations, additional incentives totaling about $6-7 million per year will be given to the colleges and departments based on their performance in implementing various research projects, so as to encourage the colleges and departments to apply for external research projects.

A. Increase incentives for teachers to pursue research projects outside the University:

   a. An annual allocation of funds will be made for program matching to assist faculty in applying for external projects.

   b. After deducting patent-related fees, rebates to funding organizations, and promotion costs, all revenues derived from intellectual property completed with the University's resources or promoted, transferred, or sold through the University shall be allocated 65%-85% of the inventor's share in accordance with "Regulations on the Management of Research and Development Achievements and Technology Transfer".

   c. Establish the "Key Points for Management of Income and Expenditures from University-Industry Cooperation", and set the administrative fee level according to the total funding of the project, and regulate the proportion of the administrative fee to be returned to the project director in the regulations. In addition, the proportion of program balance allocated to project directors is increased to 90%, and the scope of use of the balance is also relaxed.

▼ Project Matching Grant Statistics 2019-2022

	2019	2020	2021	2022
No. project	9	7	9	10
Recurrent ($'000)	911	640	445	469
Capital account ($'000)	1,897	1,516	1,684	1,663
Total ($'000)	2,808	2,156	2,129	2,132

B. Enhancing teachers' research capacity:

   a. Formulation of the "Subsidy Scheme for New Teachers" to assist new teachers in organizing the construction of basic equipment for teaching and research.

   b. "Key Points to Encourage Teachers to Apply for NSTC Thematic Research Project Grants" was developed to support teachers who have not received NSTC grants to continue to execute their projects, and to sustain teachers' research capacity (Table).

▼ Statistics on Teachers' Academic Research Support Grants 2019-2022

		2019	2020	2021	2022
Subsidy for new faculty	Person	1	2	3	4
	$'000	70	120	190	260
Encourage faculty to apply for NSC thematic research project grants	Person	9	9	3	8
	$'000	720	720	150	490

   c. To formulate "Teacher Co-employment Regulations" to simplify the internal employment procedures for teachers co-employed by the consortium schools, and to promote inter-school cooperation and exchange of teachers.

C. Assistance to faculty in industry-academia cooperation : Provide faculty with opportunities to participate in industry-academia matchmaking, talent cultivation, and seminars organized by the Consortium in order to enhance faculty's R&D energy. The Industry-Academic Incubation Center promotes and advices faculty to apply for the NSC Research and Entrepreneurship Project, which has yielded fruitful results, and has been compiling and annually updating a handbook of research results since 2018 years ago, which serves as a guide for potential partner companies.

D. Establishment of a specialized window for foreign faculty and researchers: A special window will be established in International Office to liaise with colleges, departments, institutes and other relevant units on campus for administrative assistance to foreign faculty and researchers, in order to facilitate the building of an internationalized and friendly campus.

Strengthen support and incentives for academic research, & improve industry-academia-media collaboration
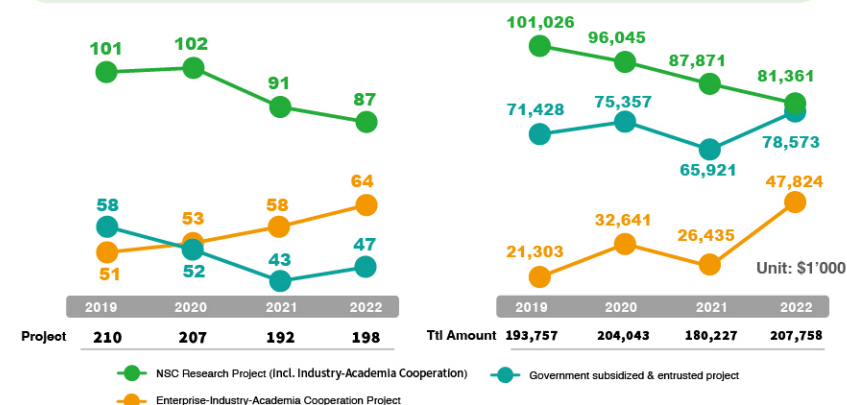
▲ Number & amount of project executed 2019-2022

3.2.3 Student Incentive Scheme

Incentive portion for domestic students

Undergraduates

In order to encourage outstanding high school graduates to enroll in our daytime bachelor's degree programs, "Key Points of National University of Kaohsiung Scholarships to Encourage High School Students to Study at NKU" has been formulated.

Unit: Person; $1,000

		2019	2020	2021	2022
Star Plan	Person	0	2	1	0
	Scholarship	0	20	10	0
Application	Person	16	29	7	9
	Scholarship	203	347	70	120
Admission via examination	Person	3	2	5	11
	Scholarship	74	50	84	253
Total	Person	19	33	13	20
	Scholarship	277	417	164	373

▲ Statistics on Scholarships for High School Students 2019-2022

Graduate Program

In order to encourage outstanding domestic students to apply for master's degree programs, industry in-service master's degree programs, or in-service master's degree programs at the University, "Regulations for Continuous Study of Master's Degree Programs for Students" has been formulated for the purpose of continuous study, shortening the number of years of study, or planning for internships in the industry, and "Regulations for Admission of Postgraduate Students to Master's Degree Programs" has also been formulated for the purpose of providing postgraduate students who have been admitted into the University with the opportunity to apply for relevant scholarships.

Unit: Person; $1,000

		2019	2020	2021	2022
Master's	Person	88	81	71	86
	Scholarship	758	562	587	632
industry in-service master's	Person	3	1	1	0
	Scholarship	6	2	2	0
in-service master's	Person	7	8	1	4
	Scholarship	14	16	2	8
Total	Person	98	90	73	90
	Scholarship	778	580	591	640

▲ Graduate Student Scholarship Statistics 2019-2022

Measures to Match Scholarships and Employment for Foreign Students

Encouragement of foreign students

Since 2021, the Department of East Asian Languages and Literatures has provided scholarships for foreign students to study Korean, and since 2022, it has been admitting foreign students to study in Korean Section regardless of nationality; the Department of Information Management provides research grants and living allowances for one to two foreign students.

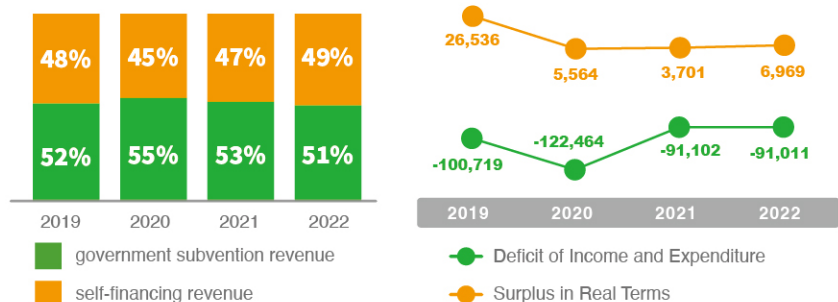#### Matching corporate internships and employments

The University cooperates with the Industrial Development Bureau of the Ministry of Economic Affairs to organize the "TCA Talent Cycle Exchange Promotion Program-International Students' Practical Training", encouraging students to work as interns in the enterprise alliance during the semester. The university also actively cooperates with enterprises in organizing employment matchmaking and briefing sessions, such as the Ministry of Economic Affairs' entrusted semiconductor talent pre-employment training and employment matchmaking program, to promote foreign students to stay in Taiwan for employment.

3.3 Sustainable Finance

3.3.1 Financial Performance

▼

1. NUK is a national university, and its main sources of income are teaching and research grants, tuition and fees, and self-financing income such as income from cooperative education. All income, expenditures, and utilization of funds are in accordance with the "Regulations on the Establishment of Institutional Funds of National Universities," "Budgeting Act," "Accounting Act," and "Principles of Internal Audit and Disposal," and other relevant regulations.

2. In conjunction with the school's development plan and the consideration of overall financial resources, the University prudently prepares budgets and strengthens budget execution and control in order to maximize financial effectiveness and enhance the efficiency of resource utilization, and also actively strengthens the implementation of measures to raise revenue and reduce expenditures to increase self-financing income and reduce various expenditures.

3. From 2019 to 2022, self-financed income grew and the final budget deficit decreased yearly. In 2019, cash and fixed deposits and available funds increased by more than $30 million compared with 2021, and the final budget is a real surplus, which has been increasing year by year.

	Item	2020 Amount	2020 Increase/decrease over previous year	2021 Amount	2021 Increase/decrease over previous year	2022 Amount	2022 Increase/decrease over previous year
Government subvention	School Teaching & Research Grant	487,062,000	-1.02%	483,374,000	-0.76%	500,466,000	3.54%
	Other subventions	150,847,450	67.72%	118,050,271	-21.74%	96,283,543	-18.44%
Self-financing	Tuition & fees (net)	275,115,657	-0.91%	282,448,558	2.67%	291,225,058	3.11%
	Cooperative education	164,153,349	-8.96%	177,080,731	7.88%	201,367,723	13.72%
	Extension education	19,293,359	2.80%	27,080,065	40.36%	17,587,436	-35.05%
	Royalties	4,472,309	314.04%	1,715,185	-61.65%	820,000	-52.19%
	Miscellaneous business	5,185,386	1.95%	5,373,390	3.63%	4,613,343	-14.14%
	Interest	7,712,251	-11.54%	6,928,357	-10.16%	9,809,954	41.59%
	Investment Balance	411,729	-14.60%	771,596	87.40%	1,216,617	57.68%
	Asset use & royalties	15,014,639	-19.93%	13,075,410	-12.92%	32,990,713	152.31%
	Beneficiary Income	14,449,660	41.12%	7,436,830	-48.53%	9,255,885	24.46%
	Other business	8,212,960	-21.66%	15,644,805	90.49%	9,514,619	-39.18%
Total		**1,151,930,749**	**3.45%**	**1,138,979,198**	**-1.12%**	**1,175,150,891**	**3.18%**

Unit: NT$

▲ Sources of income 2020-2022

Item	2020 Amount	2020 Increase/decrease over previous year	2021 Amount	2021 Increase/decrease over previous year	2022 Amount	2022 Increase/decrease over previous year
Teaching research & training costs	880,762,457	7.57%	826,000,689	-6.22%	870,623,114	5.40%
Cooperative education cost	159,290,444	-9.42%	181,098,692	13.69%	168,969,221	-6.70%
Extension education cost	18,025,394	0.64%	25,526,463	41.61%	17,028,302	-33.29%
Student fees & incentive awards	21,032,085	-9.64%	16,132,385	-23.30%	21,692,159	34.46%
Management & general expenses	155,206,864	4.66%	152,207,854	-1.93%	158,089,185	3.86%
Miscellaneous business expenses	3,821,482	-2.19%	3,806,710	-0.39%	3,690,313	-3.06%
Investment shortfall	–	–	–	–	264,546	–
Miscellaneous	36,256,195	38.19%	25,308,645	-30.19%	25,805,312	1.96%
Total	**1,274,394,921**	**4.95%**	**1,230,081,438**	**-3.48%**	**1,266,162,152**	**2.93%**

Unit: NT$

▲ Sources of expenditure 2020-2022

48% 45% 47% 49%
52% 55% 53% 51%
2019 2020 2021 2022
■ government subvention revenue
■ self-financing revenue

▲ yearly ratio of government subvention revenue and self-financing revenue 2019-2022

26,536 5,564 3,701 6,969
-100,719 -122,464 -91,102 -91,011
2019 2020 2021 2022
● Deficit of Income and Expenditure
● Surplus in Real Terms

▲ Deficit of Income and Expenditure & Surplus in Real Terms 2019-2022

2% Non-operating expenses
26,069,858
98% Operating Costs & Expenses 1,240,092,294
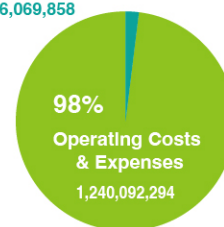
▲ Share of operating costs & expenses costs 2022

51% Government subvention income 596,749,543
49% Self-financing income 578,401,348

▲ Share of self-financing income 2022

5% Non-operating Income
62,787,788
95% Operating Income 1,112,363,103
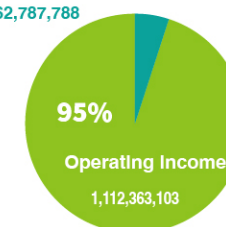
▲ Share of business income 2022

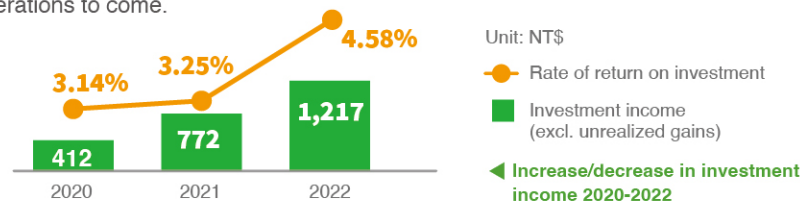## 3.3.2 Sustainable Investment

In view of the fact that environmental sustainability is one of the most important founding spirits of National University of Kaohsiung, the investment management team is committed to building a portfolio of green assets with strong downside resilience and stable returns. In the selection of investment targets, it not only pursues solid performance, but also focuses on diversification and sustainability, prioritizing investments in companies ranked in the "Taiwan Sustainability Index".

The Taiwan Sustainability Index is a measure of environmental, social and corporate governance (ESG) performance on the Taiwan stock market. It was developed by FTSE Russell and follows international standards and best practices. The index was created to provide investors with a sustainable investment option and to promote the performance and transparency of Taiwan companies in the ESG area. The constituents of the Taiwan Sustainability Index are selected based on FTSE Russell's Environmental, Social and Corporate Governance (ESG) model. The model considers 14 ESG topics and measures the performance of companies through more than 300 assessments. The indicators evaluated include carbon emissions, water management, employee care, board structure, and more. These constituent stocks have positive performance in environmental protection, social responsibility and corporate governance, and are in line with the principles of sustainable development.

Currently, the proportion of the school's investment in Taiwan Sustainability Index stocks has reached 85.62% of the total investment amount.

In addition to individual stocks, the Investment Management Team has also invested in Yuanta Taiwan ESG Sustainability Fund (00850). Managed by Yuanta Investment Trust, the fund focuses on selecting Taiwan listed companies with excellent ESG performance as investment targets. Through these funds, the University is able to further support and promote industries and projects with sustainable development potential, and inject capital into these areas to promote the healthy development of society and the environment.

Through a sustainable investment approach, NUK's asset portfolio is characterized by strong downside resilience and solid returns. The University believes that investing in companies that meet environmental, social, and corporate governance standards not only fulfills its sustainable development goals, but also maintains a stable and sustainable return in times of market volatility. Through this investment strategy, it is possible for us to create a more robust and sustainable financial foundation for the University while providing the students with a stable and reliable learning environment to develop future leaders and innovators. The University is confident that such efforts will have a positive impact on society as a whole and create a better future for generations to come.

Unit: NT$
- Rate of return on investment
- Investment income (excl. unrealized gains)

◀ Increase/decrease in investment income 2020-2022

## 3.3.3 Fundraising Effectiveness

Fundraising and external resources: To promote the sustainable development of the school, the University not only strives to open up new sources of income and cut down on expenses to maximize the effectiveness of all funds and resources, but also actively raises funds from external sources to improve the construction of the campus and the quality of education. Through fundraising, it is able to achieve its goals and objectives, and continue to grow steadily each year.

Unit: NT$
- Amount donation
- No. donation

▲ **Fundraising Statistics 2019-2022**
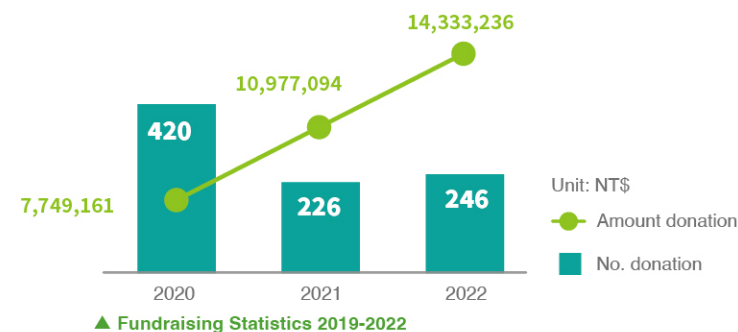
Departmental & Institution Scholarships	838,717
University-wide Emergency Relief Fund/General Scholarship/International Student Scholarship/Angel Love Grant	1,340,374
Campus Activities/Student or Club Activities	371,000
Academic Conference or Activity or Teacher's Research	706,000
Campus Planning and Construction	200,000
Development Funds for Faculties (Centers & Units)	8,322,145
Campus Funds/Higher Education Fund	2,555,000

Unit: NT$

▲ **Breakdown of Donation Items and Amounts 2022**
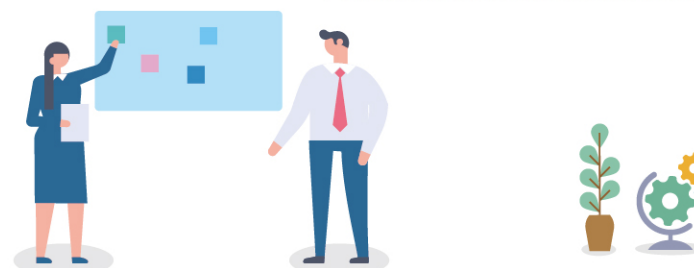
3.4 Financial Risk Assessment

Saving Resources

1. According to Article 30 of the "Regulations for the Administration and Supervision of the National University Institutional Funds", the Ministry of Education may order a school to make improvements to the school's operating funds if there is an actual shortfall in the annual budget, personnel expenses exceeding 50% of the recent annual budget, or the available funds are too low; if the school has not made any improvements by that time, the Ministry of Education may, depending on the severity of the situation, reduce the school's self-generated income to support the staffing costs of the school personnel, The Ministry of Education may order the school to make improvement within a certain period of time; if the school fails to make improvement by that time, the Ministry may reduce the upper limit of the percentage of self-financed revenues to be used to support personnel expenses, lectures, and incentives for teaching and academic research, or limit the amount of funds that may be used.

2. The school reviews the financial risk assessment indicators on a monthly basis, and the school's financial income and expenditures for the past three years. The school's operating results are all in real surplus, the personnel cost expenditures have not exceeded 50% of the recent year's finalized revenues, and the available funds are not excessively low and other financial risks are not high.

▼ Calculation of the Actual Deficit in the School Accounts 2020-2022

Unit: NT$	2020	2021	2022
Balance of income over expenditure	-122,464,172	-91,102,240	-91,011,261
+ Adjustment to add back depreciation, depletion and amortization expenses on assets purchased with treasury funds	128,027,840	94,802,858	97,980,185
= Recovery of depreciation, depletion and amortization deficit in real terms	5,563,668	3,700,618	6,968,924

▼ Personnel expenses as a percentage of latest annual finalized self-financing income 2020-2022

Unit: NT$	2020	2021	2022
The amount of payment in addition to the annual merit pay and bonus for the staff in the establishment.	41,329,999	40,978,500	43,579,345
Add: Staff costs of non-established staff.	161,202,406	162,187,759	168,004,254
Add: Remuneration for the administrative staff on the establishment for the performance of self-financing business.	2,630,416	2,519,242	3,209,615
Add: Lecture fees	550,000	480,000	0
Add: Incentives for teaching and academic research.	459,812	449,794	390,000
The total amount of the scope of the expenditure capped at 50% of the school's self-financed income in accordance with Article 9, Paragraph 1 of the Supervisory Regulations (A)	206,172,633	206,615,295	215,183,214
Total amount of self-financed income in the most recent annual accounts (B)	531,558,716	514,021,299	537,554,927
Ratio of personnel expenses to the maximum of 50% of the school's latest annual self-financing income as stipulated in Article 9(1) of the Regulations (C=A/B)	38.79%	40.20%	40.03%

▼ Available Funds 2020-2022

Unit: NT$	2020	2021	2022
Cash and fixed deposits	995,485,067	993,589,803	1,026,245,565
+ short-term realizable assets	44,553,463	16,181,949	13,948,601
Short-term repayable liabilities	358,565,586	408,189,206	407,537,331
-Outstanding capital grant programs	7,754,883	26,639,245	22,022,143
= Funds available (H)	673,718,061	574,943,301	610,634,692

▼ Determination of Average Monthly Cash Recurrent Expenditure 2020-2022

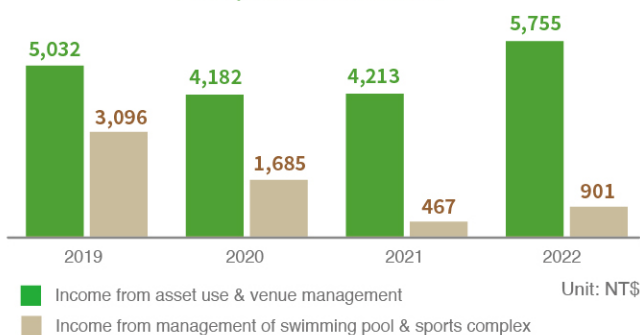| Unit: NT$	2020	2021	2022
Total operating expenses	1,274,394,921	1,230,081,438	1,266,162,152
-Depreciation, depletion and amortization	171,832,601	167,607,852	177,095,150
-Education and training cooperation costs	159,290,444	181,098,692	168,969,221
+ Depreciation, depletion and amortization under cost of education and training cooperation	9,760,135	9,618,994	9,400,901
= Recurring cash flow scenario (I)	953,032,011	890,993,888	929,498,682
Average monthly cash outflow (J=I/12)	79,419,334	74,249,491	77,458,224
Available funds as a multiple of average monthly cash outflow (K=H/J)	8.48	7.74	7.88

3.5 Sustainable Development Budget and Building Maintenance

1. Revitalization of campus assets and implementation of revenue-raising measures

   A. 82.5 hectares, 30 buildings, and a total floor area of 226,722 square meters, the campus was planned by the Campus Sustainable Development and Planning Committee, and designed and verified in accordance with the "National University of Kaohsiung's Overall Planning and Urban Design Review and Criteria Change Report".
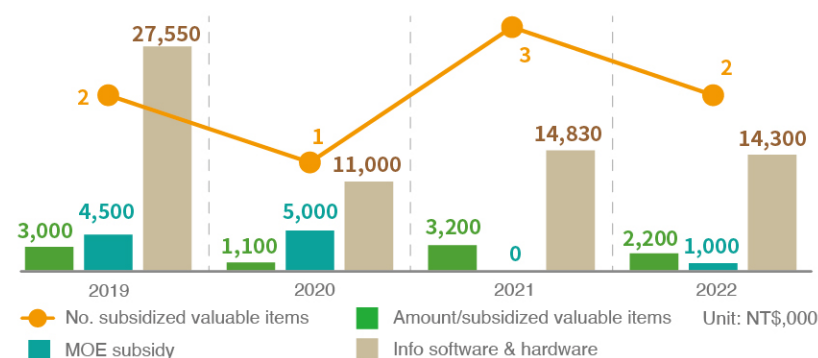
   B. The Space Allocation and Management Committee scrutinizes the allocation of space in the school premises. The average space available per student is 37.87 square meters. A portion of the space is leased for a fee for the establishment of an industry-academia program research center. There are 60 classrooms, 13 audio-visual and lecture halls with digital equipment, a 400-meter standard track and field, Hong Sze-chuen Sports Dome, an indoor swimming pool, the Sports and Leisure Center, the Student Activity Center, and a new soccer field with artificial turf. There are 1,616 beds in the student dormitory, and 62 staff dormitories. In addition, some space was leased out in accordance with the law, which resulted in the following income for the School Affairs Fund.

C. Teaching and Valuable Equipment : From 2019 to 2022, there were 8 sets of new valuable equipment, totaling $9,500,000 (Table 1-9); the Ministry of Education spent a total of $100 million on library equipment and handled related matters in accordance with the "National University of Kaohsiung Key Points of Library Instrumentation and Equipment Budget Allocation"; and for the campus network security enhancement, it has continuously invested about $670 million in hardware and software, including the addition of a new 1Gbps (downstream)/500Mbps (upstream) backup line in 109 to strengthen the stability of the network. On the hardware side, a 1Gbps (downstream)/500Mbps (upstream) redundant line was added in 109 years, and the core backbone routers in each building were updated to enhance network stability; a next-generation firewall was built in 2019, the LOG management system was replaced in 2021, and a vulnerability management platform was constructed in2022 to be introduced to the whole campus information security. In terms of software, we have improved the online teaching and learning system. In the past three years, 18 new systems, 108 expansions, and 342 modifications have been made.

▼ **Campus Asset Revitalization**

	2019	2020	2021	2022
Income from asset use & venue management	5,032	4,182	4,213	5,755
Income from management of swimming pool & sports complex	3,096	1,685	467	901

Unit: NT$

▼ **Subsidies for books/equipment & info-related software & hardware 201-2022**

	2019	2020	2021	2022
No. subsidized valuable items	2	1	3	2
Amount/subsidized valuable items	3,000	1,100	3,200	2,200
MOE subsidy	4,500	5,000	0	1,000
Info software & hardware	27,550	11,000	14,830	14,300

Unit: NT$,000

2. Ongoing budgeted expenditures related to the school's environmental sustainability and building maintenance are 7.57% of the total budget in 2022.

▼ **Yearly budget of sustainable development budget and building maintenance**

Unit: NT$	2019	2020	2021	2022
Total Budget	1,394,857,000	1,345,768,000	1,383,027,000	1,330,127,000
Sustainability & Building Maintenance Budget	294,223,645	318,869,327	211,561,715	100,646,565
Average Percentage	21.09%	23.69%	15.30%	7.57%

In order to ensure the quality of teaching and to enhance the development of faculty's academic careers, the University has established a mechanism and practice for faculty's teaching, research, and diversified promotion and evaluation, which includes the organization of diversified teaching and learning improvement initiatives for faculty to assist them in their teaching and professional growth. In addition, the University supports and protects their academic career development by improving the multiple-promotion channel, establishing an academic award system, and creating an ethical review mechanism; in ensuring the quality of faculty, staff and administrative operations, it improves the mechanism for selecting and managing faculty and staff and encourage their professional growth, so as to give full play to their professional functions and improve overall organizational performance; in ensuring the quality of courses, it has established a mechanism for review, operation, and evaluation of the course system. In terms of ensuring the quality of the curriculum, it has established a systematic review, operation and evaluation mechanism for the curriculum, and has planned a flexible teaching system based on innovative teaching to facilitate the implementation of interdisciplinary learning for students.
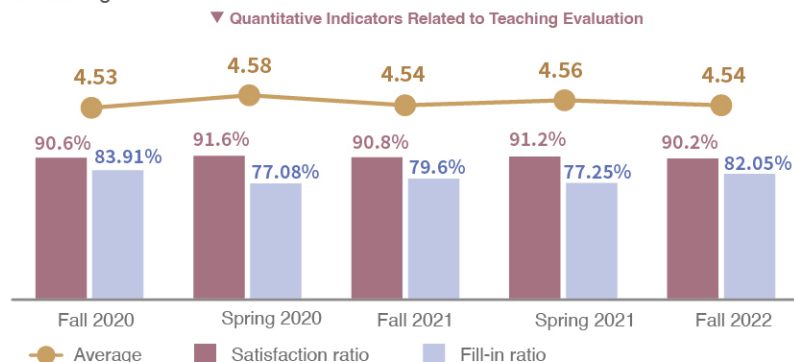
Sustainable Education Achievements

4.1 Teaching Quality and Innovative Teaching

4.1.1 Enhance Teacher Knowledge and Complete Administrative Support

▼

Consolidate Teacher Professional Development Support

1. Promote the implementation of the "Teacher Mentoring System" to encourage senior teachers to pass on their experience, mentor new faculty or peer colleagues, and conduct team activities based on teaching, research, service, and student counseling experiences; and organize exchange sessions for new faculty to learn about teaching and administrative operations and campus culture.

2. The satisfaction rate with teaching in NUK has shown a positive and steady development, with a 91% satisfaction rate in teachers' evaluation, and a 100% rate of faculty with unsatisfactory results receiving relevant counseling measures from Teaching and Learning Advisory Committee.

3. Teaching assistants are deployed to enhance teaching quality and provide learning counseling.

▼ Quantitative Indicators Related to Teaching Evaluation

	Fall 2020	Spring 2020	Fall 2021	Spring 2021	Fall 2022
Average	4.53	4.58	4.54	4.56	4.54
Satisfaction ratio	90.6%	91.6%	90.8%	91.2%	90.2%
Fill-in ratio	83.91%	77.08%	79.6%	77.25%	82.05%

▼ Processing Teaching Evaluation

	2020	2021	Fall 2022	Total
No. unsatisfactory course	9	16	4	29
No. unsatisfactory teacher (A)	10	11	5	26
No. received counseling (B)	10	11	5	26
Ratio received counseling (C=B/A)	100%	100%	100%	100%

Promote innovative and advanced learning for teachers to enhance their teaching knowledge.

1. Teacher knowledge training: To further faculty's professional knowledge in curriculum design, teaching and research methods, project and essay writing, and research ethics; to counsel faculty in conducting research on teaching practices; and to seek and integrate external resources. 31 sessions were held in 2019-2022, with 457 participants (Exhibit 2-3 and Attachment 2-3).

2. Teachers' Innovative Teaching and Advanced Learning: Planning innovative teaching and digital training courses, with a total of 56 workshops and 1,029 participants in 2019-2022, including the Power E three-school joint teacher training program in August 2021, which included online synchronous teaching and online curatorial exhibitions, with a total of 60 participants.

3. Promoting general education teaching and enrichment: Promoting keynote speeches and workshops for teachers in various fields. In 2019-2022, 35 keynote speeches and workshops for teachers in various fields were held, with a total of 930 participants, and Taiwan Congress on College General Education co-hosted "2023 International Symposium on Sustainability in General Education, Medicine and Humanities, and STEAM Education" in June 2023.

4. Developing the integration of digital technology into teaching: In accordance with the "Key Points for Digital Audio-visual Teaching Material Production Subsidies" and the "Key Points for the Implementation of MOOCs Courses", administrative resources were provided to encourage teachers to design digital courses, and the number of MOOCs course electees in 2019-2022 reached 16,582; the number of teachers participating in the digital courses reached 51, and the number of on-campus viewers of the digital courses reached 27,475 in 2019-2022.
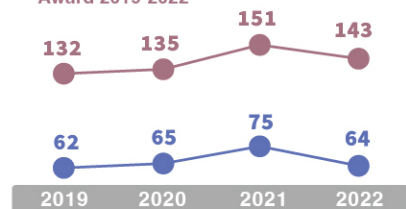
Strengthen the support and rewards for teachers' academic research, and improve the mechanism of industry-academia matchmaking.

Establishment of an Academic Reward System for Teachers

1. Establish the "Outstanding Research Teachers Award", "Outstanding Industry-University Cooperation Teachers Award" , and "Outstanding Young Scholars Award" to reward teachers with outstanding research and industry-university cooperation results; established the "Key Points for Handling NSCI Subsidized Research Award Support for Universities and Colleges", and applied for research award subsidies from NSCI every year as a flexible salary subsidy for outstanding teachers; establish "Teachers' Academic Publications Award", and allocate funds to award teachers whose academic papers are published in journals included in the seven databases, such as SCI(E), SSCI, etc., and those who have published books and chapters of their academic expertise.

▼ Statistics of Academic Publications Award 2019-2022

▼ Statistics of Monograph 2019-2022

	2019	2020	2021	2022
No. Subsidized Paper	132	135	151	143
No. Subsidized Teacher	62	65	75	64
No. Book (incl. school database)	524	488	365	311

━●━ No. Subsidized Paper   ━●━ No. Subsidized Teacher   ━●━ No. Book (incl. school database)
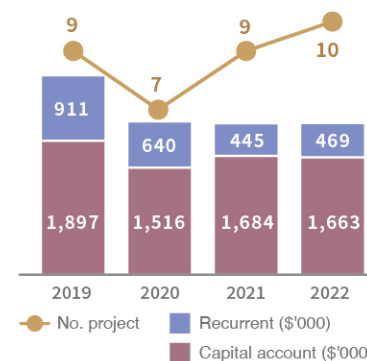
Note: Conference papers and papers not included in the seven indexed databases are not included in this award.

2. The University has consolidated three awards, including the performance awards for each college, "Academic Research and University-Industry Cooperation Award for Outstanding Academic Teaching Units" from R&D Office, and "International Exchange and Cooperation Award for Outstanding Academic Units" from International Affairs Office, and has added the teaching performance of Academic Affairs Office, the evaluation of graduates and employers from Academic Affairs Office, and the related indexes of the "Ministry of Education's School Affairs Data Bank", in order to consolidate them into the "College" and "Departmental" awards for the performance of teaching units. Each year, three departments with outstanding performance are selected and given incentive awards, and are publicly recognized on campus.

3. "Key Points of Budget Allocation for Library Instruments and Equipment" has been formulated. In addition to the capital departmental funds allocated to the colleges and departments in accordance with the regulations, additional incentives totaling about $6-7 million per year will be given to the colleges and departments based on their performance in implementing various research projects, so as to encourage the colleges and departments to actively apply for external research projects.

4. Increase incentives for teachers to pursue research projects outside the university.

   A. An annual allocation of funds will be made for program matching to assist faculty in applying for external projects.

   B. After deducting patent-related fees, rebates to funding organizations, and promotion costs, all revenues derived from intellectual property completed with the University's resources or promoted, transferred, or sold through the University shall be allocated 65%-85% of the inventor's share in accordance with "Regulations on the Management of Research and Development Achievements and Technology Transfer".
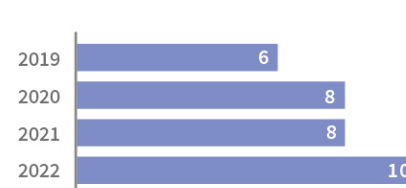
   C. Establish the "Key Points for Management of Income and Expenditures from University-Industry Cooperation", and set the administrative fee level according to the total funding of the project, and regulate the proportion of the administrative fee to be returned to the project director in the regulations. In addition, the proportion of program balance allocated to project directors is increased to 90%, and the scope of use of the balance is also relaxed.
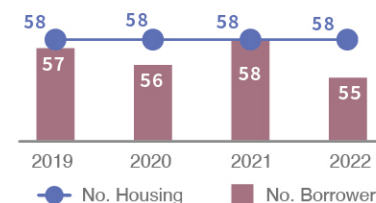
	2019	2020	2021	2022
No. project	9	7	9	10
Recurrent ($'000)	911	640	445	469
Capital account ($'000)	1,897	1,516	1,684	1,663

━●━ No. project   ■ Recurrent ($'000)   ■ Capital account ($'000)

▶ Project Matching Grant Statistics 2019-2022

Provide administrative and material resources to enhance the support system for the teaching and research environment

1. The 82.5-hectare campus consists of 30 buildings for teaching, research and administrative purposes, with a total floor area of 226,722 square meters.

2. In order to meet the demand for additional space for the implementation of the University's industry or research centers, the University will provide and assist faculty members to set up the office space of Industry-Academia and Research Center by leasing the University-controlled and coordinated use space for a fee (attached).

3. To enable faculty-staff to work with peace of mind, the University provides them with accommodation on application (attached) and has drawn up "Key Points on the Management of Staff Housing" for their management.

Year	Rental Space
2019	6
2020	8
2021	8
2022	10

▲ Rental Space Statistics 2019-2020

	2019	2020	2021	2022
No. Housing	58	58	58	58
No. Borrower	57	56	58	55

━●━ No. Housing   ■ No. Borrower

▲ Statistics on the Number of Housing and Borrowers 2019-2020

Plan for Innovative Teaching and Learning Enhancement Programs

The University is committed to promoting faculty's advanced teaching, furthering faculty's innovative teaching and on-site practical knowledge. The promotion projects include: cross-field co-teaching, practical in-depth learning, digital technology-integrated teaching, field practice learning and other innovative teaching, and to subsidize the departments and faculty to develop special modules of specific topics for colleges, sustainable issues, and local practice.

▼ Statistics of Statistics of Courses with Tutor Available

	Fall 2019	Spring 2019	Fall 2020	Spring 2020	Fall 2021	Spring 2021	Fall 2022
No. Tutor	152	144	180	145	222	126	143
Tutor Avg. score (student end)	3.88	3.81	3.93	4.01	3.75	4.03	3.94
Tutor satisfaction (teacher end)	92.2%	92.1%	92.6%	92%	93.4%	92.4%	93%

4.1.2 Teacher and Student Growth Community

▼

Faculty is encouraged to form growth communities for the purpose of pedagogical innovation, interdisciplinary teaching or research. During 2019-2022, a total of 67 communities were organized and 122 public activities were held; a peer class observation system was developed, and the teaching observation mechanism was improved to enhance the quality of teaching. In 2022, a total of 105 courses were open for class observation, with 134 participants.

Establish a professional growth community for faculty

With the revision of "Implementation of the Teacher Professional Growth Community", the organization of the community has changed from a unilateral innovation group in 2018 to teaching improvement in 2020, and then to a community with three main directions, namely, teaching improvement, teaching innovation, and research on teaching practice in 2021. Through the different goal orientations, faculty's teaching experiences have accumulated, promoting peer learning and development. In 2020-2022, the faculty joined the growth activities 333 times, and the total number of open courses reached 87. The variety of courses also attracted many faculty members to observe classes. Through peer-to-peer exchanges, the faculty have learned about the actual operation of different teaching methods, which inspire them to think more innovatively and to improve their professional development.

Promote growth communities between teachers and students

The University encourages applicants for the competitive programs to set up teacher growth communities to increase the sharing and exchange of experiences among various groups, so as to achieve the common preparation and to refine pedagogy; and to promote teacher-student co-learning communities. In 2022, the University has promoted 10 groups of teacher-student communities, and has used various topics to guide the establishment of the community and improve teaching quality.

▼ Number of teachers participating in class observation 2019-2022

	2020	2021	2022
full-time faculty/ratio	55(96.5%)	64(92.8%)	72(100%)
part-time faculty/ratio	2(3.5%)	4(5.8%)	0(0%)
other personnel/ratio	0(0%)	1(1.4%)	0(0%)
full-time faculty partaking rate	23.2%	27.0%	30.4%
No. observed class	36	26	25門

▼ Number of teachers participating in growth community 2019- 2022

|	2020	2021	2022
No. Community	20	21	14
No. teaching practice rel. community	7	1	2
No. participant	127	122	84
No. full-time faculty	114	113	77
No. part-time faculty	6	3	3
No. inter-school faculty	5	6	4
Other personnel	2	0	0
No. open activity	33	28	31

4.1.3　Integration of Innovative Teaching and Research

▼

Enhance teachers' innovative teaching and practical knowledge to improve teaching quality and learning effectiveness.

In order to implement teaching innovation and enhance education quality, the University has established a support system for teaching and research, and organized seminars and conferences related to professional growth and sharing experience through Teaching and Learning Development Centre and the Academic Affairs Office.

1. Promote Faculty's Innovation and Teaching Enhancement Subsidy Project: Plan interdisciplinary co-teaching, integration of digital technology into teaching and learning, and field practice learning, as well as the development of sustainable issue-oriented and on-site practice course modules.

2. Optimize the mechanism for faculty to implement teaching practice research: Other than encouraging faculty members to apply for MOE Teaching Practice Research Project, the University will subsidize and assist them to expand their small-scale projects to apply for the MOE projects; and make regulatory amendments to be included in the faculty's professional growth community, "Regulations on Faculty Promotion" and "Faculty Evaluation Methods"

▼ **Pass Rate of MOE Teaching Practice Research 2019-2022**
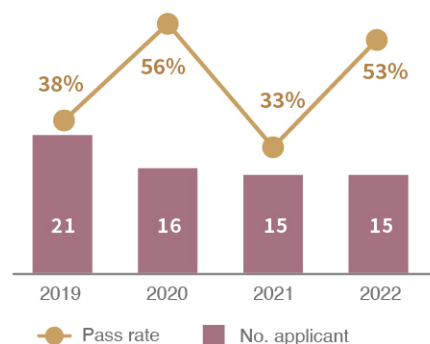
3. In order to implement the SDGs-Inside strategy, the College of Humanities has adopted SDG 5 Gender Equality, the College of Law has adopted SDG 16 Peace and Justice, the College of Management has adopted SDG 8 Employment and Economic Growth, the College of Science has adopted SDG 4 Quality of Education, and the College of Engineering has adopted SDG 9 Industry and Innovation and Infrastructure as the highest correlations.

Developing multi-disciplinary research with specialty to add value to the research results

1. Project Implementation Results: In 2008-111, the University implemented 807 NSC grant research projects (including industry-academia cooperation projects), government agency sponsored and commissioned projects, and industry-academia cooperation projects with non-government agencies, amounting to more than $780 million, with the average size of each project expanding yearly.

▼ **Project Execution Summary 2019-2022 _No. Project**
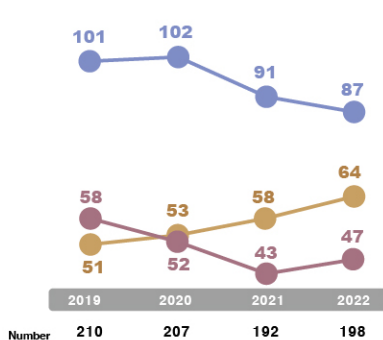
▼ **Project Execution Summary 2019-2022 _Sum.**
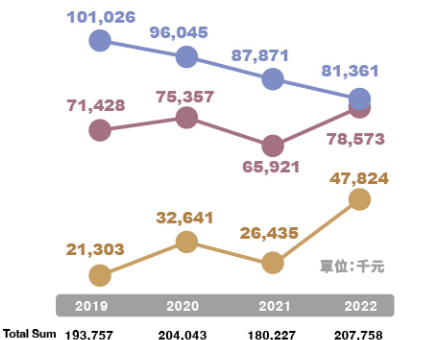
Note: The statistics of "government sponsored and commissioned projects" excludes the curriculum projects of Academic Affairs Office and Education Development Center.

2. Achievement of industry-academia cooperation among the 32 research centers: In accordance with "Regulations for the Establishment of Research Centers" and "Regulations for the Management and Evaluation of Research Centers" for management and evaluation, the results are classified into three grades, namely, A, B, and C, and the distribution system of administrative fees is formulated based on the evaluation results, and the operation of the centers and the achievement of their performance are implemented through the mechanism of management and evaluation. The University has established 32 research centers (including 3 university-level centers, namely the Fastener and Steel Technology Research Center and the Southeast Asia Development Research Center and the Artificial Intelligence Research Center), and 29 college-level centers to carry out university-industry cooperation, with a total amount of 230 projects and about $254 million.
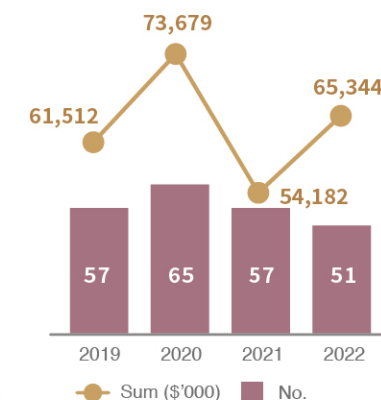
▶ **No. & sum of university-industry cooperation projects by research centers**

3. Establish cross-school R&D cooperation mechanism:

A. Established strategic alliances for academic exchanges : Signed academic exchange agreements and strategic alliance contracts with 11 schools including Open University of Kaohsiung, National Sun Yat-Sen University, National Cheng-Kung University, National Defense University, National Quemoy University, Taiwan Shoufu University, Kaohsiung Medical University, I-Shou University, Air Force Academy, National Taitung University, and Military Academy.

B. Joined "National University System of Taiwan ": the University joined National University System of Taiwan in 2021. Since then, it has established an exchange platform with other universities and colleges, and sought multiple connections with them such as teaching, research, and talent cultivation.

C. Joined "Global Research and Industry Alliance": Since 2017, the University has participated in Global Research and Industry Alliance integrating the R&D capacity of five universities including Sun Yat-sen University, Kaohsiung Medical University, Pingtung University of Science and Technology, and I-shou University, and recruited member companies to integrate cross-university resources and promote industry-academic cooperation and technology transfer.

4. Encourage application for R&D patents: The University has budgeted to subsidize inventors to apply for domestic and foreign patents. In the past four years from 2019 to 2022, the number of patent applications totaled 65, with an average of 16 applications per year.

▼ **Number & sum of patent technology transfer**

	2019	2020	2021	2022	Total
No. patent application	21	16	15	13	65
No. patent license	16	13	11	8	48
Application related subsidy ($'000)	324	365	476	817	1,982
No. Technology licensing	5	4	5	2	16
Sum of Technology licensing ($'000)	417	303	2,428	350	3,498

5. Cultivating of specialty research teams: The departmental specialties are linked to cultivate specialty research teams, including AI Research Center for, Disaster Prevention and Rescue Technology, Health and Bionic Technology, Sustainable Living Environment Technology Center, Advanced Structural Integration Technology Center, Digital Content Design Center, and ASE-NUK Industry-University Cooperation Center.

4.2 SDGs Courses and Research

In terms of curriculum and teaching planning, the University has established an appropriate curriculum structure and distribution of courses that meets the University's goal of cultivating sustainable human resources, and the courses correspond to the core competency indicators of the students. In addition, the University has established a comprehensive mechanism for curriculum and teaching planning, review and operation in general education, double major, minor, degree (credit) program. IF School, the interdisciplinary education program, has established a complete mechanism for planning, reviewing and operating the curriculum and teaching, to implement diversified and flexible teaching system.

4.2.1 Sustainable Development Courses

Continuous improvement of our curriculum structure planning and review mechanism

Curriculum structure is a practical strategy for nurturing talents. In order to strengthen the rationality of the sustainable curriculum structure and to cultivate professional competencies in line with the departmental settings, the University has paired practical cross-domain curriculums to enhance learning effectiveness and competitiveness. In order to achieve this strategy, the program structure and review mechanism are described below.

1. Establishment of solid professional curriculum in departments: Curriculum committees at all levels should include representatives of scholars, experts, industry, students, and graduates from both inside and outside the university, and should regularly review the educational goals, core competency indicators, and curriculum structure of the departments, and make timely adjustments in accordance with academic trends, government policies, and industry needs.

2. Establishment of interdisciplinary sustainable IF School: IF School was founded in 2018 along with a curriculum committee. It invites the school faculty to offer courses and review system of the curriculum committee to ensure the quality of the courses. In 2021, it set its curriculum theme of interdisciplinary sustainability to promote innovative thinking, emerging technology, and narrative courses in order to develop a curriculum with featured characteristics.

3. Improvement of the quality of general education: The general education curriculum planning must be in line with the United Nations' SDGs for sustainable development and the content of the school's basic literacy. Through a rigorous process of curriculum planning and review, and a professional quality assurance mechanism for teachers, the University hopes that its general education philosophy and goals can be fully realized.

Curriculum corresponding to students' core competency indicators

The University takes the five core competencies of students as the basis for cultivating students' competitiveness, including independent learning, problem-solving, interdisciplinary, innovation, and international mobility, establishes an interdisciplinary learning system and field, plans a diversified interdisciplinary curriculum, and links industrial practices, and is committed to cultivating higher education personnel that meets the trends of the times.

Departmental Core Competency Indicators for Students

1. Courses offered by each department correspond to the core competency indicators set by their respective colleges. The questionnaire surveys on the core competencies of each college and the core competencies of the graduates of 2019-2022 are shown in Attachment 2-9.

2. The Core Competency Indicators of each department are based on the School Core Competencies which are formulated according to the characteristics of the department and its philosophy of nurturing talents (Attachment 2-10).

3. General Education Curriculum: The school's basic literacy and core competency development education focuses on the planning of the school's "Core General Education Curriculum Module", which is related to the six dimensions of the curriculum and the indicators of literacy and competency as shown in Attachment 2-11.

4. Interdisciplinary curriculum/Micro-curriculum

   A. Integrate the highlighted areas of each department, plan and integrate the characteristic courses in the form of micro-credit, and cultivate students' interdisciplinary abilities. Increase interdepartmental student cooperation and cultivate diversified and specialized talents.

   B. Teachers of IF School should plan their courses in accordance with the School Core Competencies and the School of Innovation Core Competencies, and the courses should only be offered after the School Curriculum Committee has reviewed the courses.

   C. In order to meet the needs of the society and the industry, and to increase the diversified learning opportunities for students, General Education Centre has implemented "Sustainable and Environmentally Friendly General Education Micro-Credit Curriculum" and "Technology in Daily Life Micro-Credit Curriculum" since 2021.

5. Students offer courses: Students may apply to offer general education courses in accordance with the procedures established by for General Education Center. Starting from 2017, a total of five courses, including Taiwan Social Issues from a Legal Point of View, Experiential Design Thinking, Introduction to Traditional Massage and Rehabilitation, Elementary Vietnamese I, and Elementary Vietnamese II" have been enrolled.

Solid structure of general education curriculum to cultivate students' interdisciplinary macroscope

General Education is a learner-centered program that implements the educational ideals of "whole-person education" and "civic formation education". In terms of curriculum planning, it uses the common required courses to cultivate students' basic competencies, and the Core General Education and Liberal Arts Curriculums to cultivate students' basic qualities and core competencies required for modern citizenship.

Relationship between curriculum structure, allocation of students and human resource development

1. Departmental Core Competency Indicators for Students

A. To develop the core of learning and construct students as interdisciplinary talents. To build analytical and problem-solving skills on the professional competencies of the departments to which students belong.

B. he number of credits for graduation from undergraduate programs ranges from 128 to 152, and each department has set up its program structure and credits according to its professional training and manpower development objectives. The program structure and the number of credits for graduation of each department are shown in Attachment 2-13.
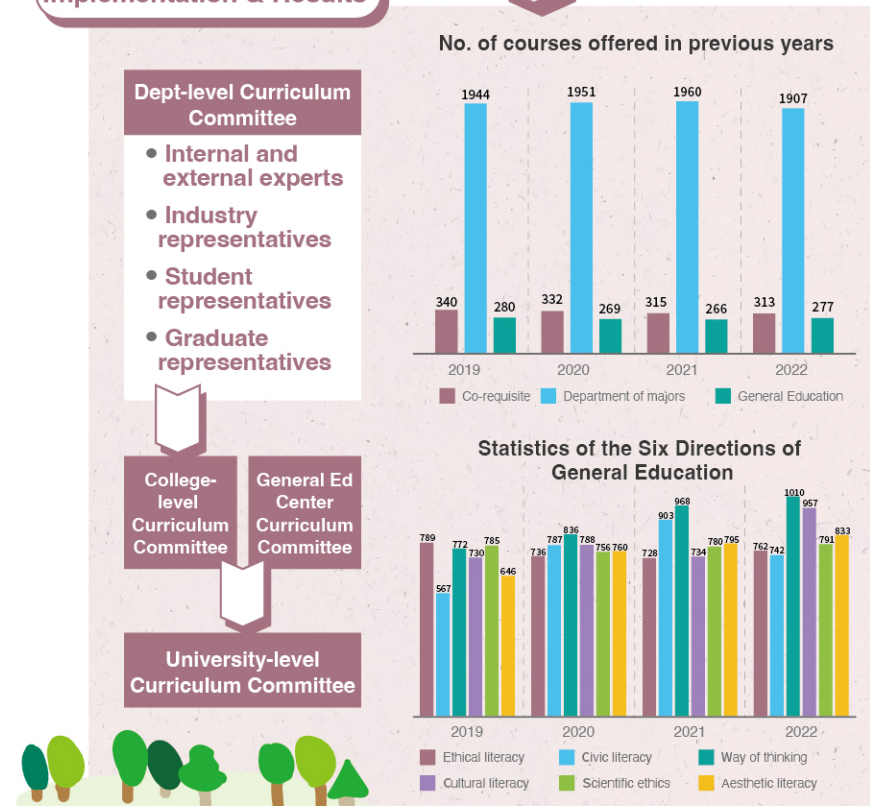
2. General Education Curriculum

A. Curriculum Planning and Talent Cultivation: The common required curriculum includes subjects such as Chinese, English conversation and reading, physical education, and service-learning development, which cultivate students' basic abilities; the required core general education curriculum includes six dimensions, including "thinking method, aesthetic literacy, civic literacy, cultural literacy, scientific literacy, and ethical literacy", which are in line with the connotations of the school's basic literacy; the elective liberal arts curriculum is divided into three categories, including "humanities, social science, and natural science", which cultivate students' cross-field macro-views and sustainable competitiveness.

B. The total number of credits in the General Studies Curriculum is 32, and the configuration is described below:

a. 8 credits of co-requisite courses: 4 credits each of Chinese and English conversation and reading; 0 credit each of physical education and service-learning development. In accordance with the university's co-requisite requirement, freshmen and sophomores are required to take physical education for two hours per week for a total of four semesters, and service-learning development courses are required by the University, which include both on-campus and off-campus community service for 18 hours per semester for a total of two semesters.

b. A minimum of 12 credits of core General Education courses: Departments are allowed to exclude one of the six dimensions that is close to their field, and students are free to choose one course from each of the other five dimensions, each of which is worth 3 credits.

c. At least 6 credits of Liberal Arts courses: at least one course from each of the three types of courses, with 2-3 credits per course; in addition, cross-college elective courses are planned, and students who take courses from other colleges can be credited with a maximum of 6 credits of Liberal Arts courses.

Mechanism & Strategies

- **Construct suitable curriculum & teaching mechanism**
- **Enhance Student Core Competency Indicators**

Implementation & Results

Dept-level Curriculum Committee

- **Internal and external experts**
- **Industry representatives**
- **Student representatives**
- **Graduate representatives**

College-level Curriculum Committee

General Ed Center Curriculum Committee

University-level Curriculum Committee

No. of courses offered in previous years

Statistics of the Six Directions of General Education

3. Interdisciplinary learning / Micro-programs with school characteristics

A. Encourage students to participate in interdisciplinary learning, rollingly revise the laws and regulations of minor departments and double majors, and convey cross-field industry trends and course planning in university introductory courses, and clearly mark courses/micro-courses in the course selection system, and then provide cross-field learning courses that integrate learning and application, and strengthen cross-field professional and technical capabilities.

B. Develop college-based micro-curriculums with special characteristics to achieve the objectives of integrating "learning to use" and enhancing the competitiveness for employment. 3,600 students from various colleges were enrolled in the 2019-2022.

▼ Statistics on students taking college-based micro-curriculums 2019-2022

	2019	2020	2021	Fall 2022
Humanities & Social Science	0	251	295	108
Law	0	261	261	140
Management	0	208	318	84
Science	210	326	322	223
Engineering	53	164	244	132

Description: 1. Micro curriculums will be offered in the College of Science and the College of Engineering starting from Spring 2019, and in the rest of the colleges starting from Spring 2020.
2. Information of 2022 is expected to be updated in June 2023.

C. F School encourages students to pursue interdisciplinary learning by revising the credit recognition rules so that students taking courses offered by IF can be recognized as inter-college General Education credits, subject to a maximum of 6 credits.

D. Developed the "Student Smart Course Selection Guide System" in 2023, which is designed in the form of an app and includes the following items: upcoming curriculum and focused curriculum to assist students in self-directed, interdisciplinary learning and career exploration.

Sustainability Courses and Talent Development

The number of graduates in 2022 is 1,351. The number of graduates who have obtained a law degree from the law enforcement-related courses offered by the different colleges, general education program, and IF School is 238. The average number of general education courses offered each year is related to the environment, sustainability, and ecology. According to the statistics in 2021-2022, an average of 5 teachers offered courses each year, with a total of 24 classes and 1,395 students enrolled in the courses, which means that on average, one-fifth of the university's students take these courses each year.

Course title	No. class	No. student
Introduction to Ecology and Environment	3	154
IIntroduction to Nature Conservation	4	237
Environmental Protection	4	240
Environmental Ethics	13	764
Total	**24**	**1,395**

▲ Environmental Sustainability General Education Curriculum Enrollment Statistics 2019-2022

4.2.2 Promotion of SDGs Literacy Test

Promote the SDGs Literacy Test: In 2020, the SDGs Literacy Awareness Test System and the Chinese and English Test banks were completed, which have been continuously updated every year. The test questions cover the following areas: sustainability awareness, sustainability attitudes, sustainability behaviors, and knowledge of the school's sustainability plan, and have been combined with the annual Freshmen Week, and sustainability-related courses, workshops, and activities to promote the implementation of the test, which has attracted 3,950 responses over the past years. In 2023, the University will promote the development of the SDGs sustainability literacy assessment mechanism based on the eight major sustainability literacies in the "Education for Sustainable Development Goals: Teaching and Learning Objectives" published by UNESCO (2017). The test questions will include the skills of thinking systematically, envisioning the future, understanding the norms and value of action, forming strategy, collaboration, critical thinking, self-awareness, and problem-solving.

▲ Promotion of SDGs Literacy Test

▶ PaGamO Self-learning platform

4.3 Student Learning Effectiveness

In order to ensure the quality of the curriculum and teaching and the effectiveness of student learning, a mechanism is planned for the review of diversified teaching and learning outcomes. In terms of curriculum and teaching quality, surveys on teaching feedback and evaluation are planned; in terms of student learning outcomes, college examinations are planned to check basic core competencies, and student learning surveys are conducted to explore students' motivation and experiences to serve as a reference for analyzing and improving the quality of the curriculum and teaching in the future.

Establish a mechanism to ensure students' learning effectiveness

1. Implement a mechanism for evaluating the curriculum quality and responding to the outcomes of teaching and learning.

Curriculum planning

A. Departments continuously revise and adjust curriculum, and review and improve the effectiveness of teaching and learning through the development of curriculum outlines, the construction of multiple assessments, reference to feedback on teaching and learning, and convening curriculum committees on a regular basis.

B. Departments continuously revise and adjust curriculum, and review and improve the effectiveness of teaching and learning through the development of curriculum outlines, the construction of multiple assessments, reference to feedback on teaching and learning, and convening curriculum committees on a regular basis.

Learning Quality Management Mechanism

Each department has established a comprehensive mechanism for managing the quality of student learning. In addition to coordinating campus-wide surveys and formulating self-improvement points for assessment, departmental councils, curriculum committees, advisory committees, and program review seminars are held regularly to identify teaching improvement items through exchanges of opinions with teachers, students, graduates, parents, and academics and the industry.
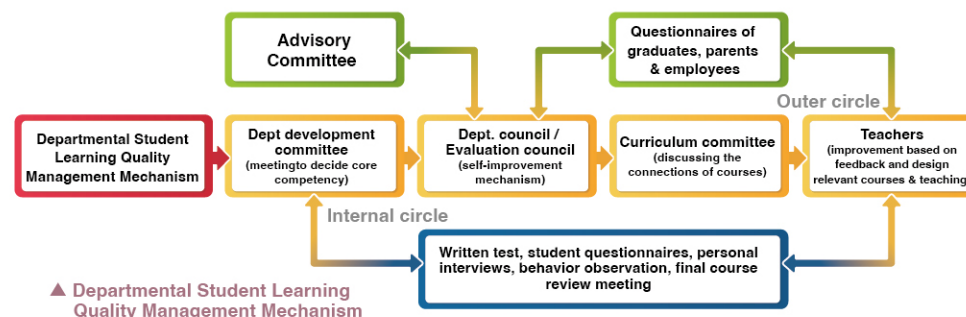
▲ Departmental Student Learning Quality Management Mechanism

Enhance teaching quality

A. "Implementation Measures for Teaching Consultation and Guidance" is implemented to improve those whose teaching performances are not satisfactory. In addition to Academic Affairs Office sending letters to the related faculty members and department chairs, the faculty members are required to join the related workshops held by Academic Affairs Office at least twice in a school year. those whose teaching performances do not reach 3.5 points in review of 2 or more subjects in the most recent six semesters are required to prepare related materials to report to the Teaching Advisory Committee and take guidance and supervision according to the mentor systems.

▼ Post-counseling correlation rate of unsatisfactory teaching evaluation results 2019-2022

	2019	2020	2021	Fall 2022
No. Course unsatisfactory course	13	9	14	4
No. unsatisfactory teacher	11	10	10	5
No. teacher didn't reach 3.5 & is required counseling	3	0	2	0
Ratio of teacher with unsatisfactory review & received counseling	100%	-	100%	-
Ratio of those not tracked for counseling in next semester	75%	-	100%	-

B. In order to respond to the effectiveness of faculty's teaching, the school has set up a reward system for outstanding courses and teachers, as described below

    a. Reward outstanding courses: To reward outstanding courses, "Reward Scheme for Outstanding Courses" is formulated.

    b. Reward outstanding faculty members in teaching: "Regulations for Selection and Reward of Teaching Excellence ". The selection process will consider the average scores of the last three years of the teaching evaluation which must be higher than the department average and the emphasis on the highlighted courses, and will be conducted based on the written materials and sharing teaching experience. At most three teachers will be selected for the Award in each academic year, which will be used as a reference for the promotion and evaluation.

2. Student-centered instruction planning

The University is committed to nurturing a new generation of higher education talents. In addition to strengthening students' basic core competencies, it also emphasizes the development of professional core competencies.The support and counseling mechanism for student learning is shown in below

	Freshman	Sophomore	Junior	Senior
	Enhance Freshman Orientation	Value-added cross-domain learning		Deepen career transition
Strategy & Practice	• Introduction to the University • College Freshman Camps • College Common Core Competencies • Chinese, English & Information/Programming Basic Competency Development Mechanisms	• Flexible Adaptive Learning Mechanism (Dual Major, Minor, Curriculum/Micro- curriculum) • Interdisciplinary Sustainability Program • General Ed & Liberal Arts Program • Field Practice & Professional Service Learning • Professional Core Competency Development Support System (Tutoring) • Student Clubs and Multiple Learning Programs • International exchange & learning plan • Innovation and Entrepreneurship Programs and Workshops		• Overall Curriculum • Industry Internship • Professional Legal Literacy Program (integrating departmental core competencies) • Business Incubation and Counseling
Feedback Mechanism	• Lai Personality Test • UCAN Interest Survey & Common Functions • Student Learning Survey • Awareness Survey of Sustainable Development (Pre-test) • College Exams • Chinese, English and Info/Programming Basic Competency Assessment	• UCAN Common Functions • Learning Surveys • Sustainability Awareness Survey (Post-test)		• UCAN Professional Functions • Graduate Diversion Survey • Employer Satisfaction Survey • Learning Surveys

▲ Student-centered instruction planning

3. Implement the three levels of core competency development and assessment, and use "College Examination" to assess the development of common basic core competencies in colleges.

A. Colleges are encouraged to develop common curriculum implementation points based on the core competencies of the College and to use "College Common Examination" as a developmental assessment mechanism to improve student learning outcomes and alert mechanisms, and to feed back the results of the assessment to the teaching site for rolling revisions.

B. The combined academic research mechanism of 2022 tracked the performance of science and engineering students (then juniors) enrolled in 2019 in terms of the results of the College Common Exam and the academic performance of their required courses, which showed that the development and validation of the College's Common Core Competencies could help students develop their professional competencies and serve as a mechanism for early warning of their learning. In the College of Engineering, for example, the percentage of students who failed the required second-year professional courses was only 4.76% for those who scored in the top 25%, while those who scored in the bottom 25% failed 20.86%, indicating that the development of the College's Common Core Competencies is related to the development of academic and professional competencies, and thus feeds into the Department's efforts to adjust its teaching initiatives.

C. For the management and evaluation of the General Education Curriculum, the Center holds regular monthly meetings to implement various tasks. Through General Education Development Committee, problems are identified through the suggestions of external scholars and experts, who provide consultation from the theories and practices. In terms of curriculum, the quality is scrutinized by external audits and internal committees; in terms of teachers, the quality of their teaching is maintained through rigorous selection and evaluation; and in terms of student learning, various tests are used to provide feedback to teachers on the revision of teaching strategies, materials, and the progress, in order to implement the PDCA (Plan-Do-Check-Act) cycle, and to form a refined teaching strategy. Teachers are encouraged to make corrections accordingly.

PLAN   DO   CHECK   ACT

4. Promote student learning surveys to understand students' learning motivation and experience

Based on the NUK self-developed Student Learning Survey, the school conducts assessment of student learning motivation, experience and effectiveness. Based on the results of the questionnaire analysis, an evidence-based practice of instructional and administrative feedback mechanism is implemented, and the current status of the responses is strengthened through executive meetings with department heads as a reference for instructional improvement and administrative support measures.

Mechanism & Strategies

▼ 學生學習成效之評估反饋機制

- **Establish a teaching achievement review mechanism**
- **Promote teaching opinion survey and evaluation**
- **Analyze and improve the results of surveys**

Implementation & Results

UCAN Questionnaire

Freshman
Interest exploration
88%
1.1
2017 78%

Sophomore / Junior
common function
57%
3.2
2020 18%

Senior
professional function
51%
3.2
2020 16%

NUK student learning questionnaire

NUK SLS **85%**
1.7
2014-2020 average 50%

School Affairs Research & Teaching feedback

Effect of soft skills on academic performance

Learning perseverance
continue learning, problem solving, work responsibility & discipline

Plan promotion
deepen USR engagement, internships, club activity & international exchange

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Student Learning Outcomes

1. Learning Effectiveness of the Undergraduate Students

Student Learning Outcomes

A. Through the main theme of " Interdisciplinary Sustainability", IF School promotes the three major areas, namely, innovative thinking, emerging technology, and narrative, to enable students to cooperate and learn cross domains. The number of students enrolled in the innovation and entrepreneurship curriculum increased by 1.3 times from 2,593 in 2017 to 3,358 in 2022. In addition, 16 entrepreneurial teams were counseled to apply for the U-START program, with 8 of them receiving the first stage of the entrepreneurship grant and 5 receiving the second stage of the entrepreneurship incentive award.

B. Students from Semiconductor Photonics Program took the Philips Lighting Student Certificate Exam in English and passed 100% of the exam, and by the end of 2022, 148 students had earned their certificates, 58.65% of the graduates are working in the Semiconductor Photonics Industry, and 50% of them are employed by leading companies in the world.

C. During 2018-2022, students in the AI field won 13 championships, 13 second-place finishes, 13 third-place finishes, and 39 Honorable Mentions in AI-related competitions. 42 students passed the professional certification examinations such as the Ministry of Economic Affairs Industrial Talent Proficiency Test for "Big Date Analysts -- Elementary Proficiency Test" and "e-Enterprise Artificial Intelligence Application Engineer Certification". The curriculum has signed internship contracts with Wistron, ASE, and NXP, with a total of 77 internships in the year of 2019-2022.

D. XR(AVR[+]) Micro Curriculum students participated in the BIM & VR Architecture Virtual Reality Design World Cup Competition (VDWC), and won 1 champion, 5 runners-up, and 4 Judges' Special Awards in 2019-2022.

E. Every year, the College of Law organizes a year-long intensive training course in legal Japanese outside the curriculum, with a fixed enrolment of 15-20 students in each session. 127 students graduated from the 1st to 11th sessions of the course, with 68% of the graduates passing Japanese proficiency test of N2 or above, and earning an average monthly salary of $61,000 for full-time employment after graduation, which is $21,000 higher than the average starting salary of a lawyer (about $40,000 to $45,000).
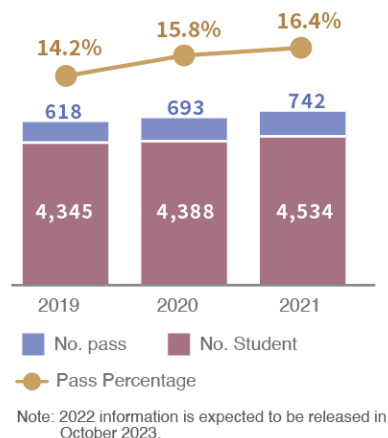
F. In 2019-2022, 12 undergraduate students passed public office exams and 788 passed licensure.

|	2019	2020	2021	2022
Public office	2	1	3	6
Taiwan Teaching Certificate	1	0	0	0
Other Taiwan certificates	142	229	149	265
Taiwan, China, Hong Kong & Macau	0	0	0	0
Other areas	1	0	1	0

G. The percentage of undergraduate students passing foreign language certificates increased from 14.2% to 16.4% in 2019-2022.

▶ **Percentage of undergraduate students passing foreign language certificates 2019-2022**

14.2%   15.8%   16.4%

	2019	2020	2021
No. pass	618	693	742
No. Student	4,345	4,388	4,534

■ No. pass   ■ No. Student   ●— Pass Percentage

Note: 2022 information is expected to be released in October 2023.

H. In 2019-2022, 95 students received grants from NSC for college student research projects, and 4 received Research Creativity Award.

▶ **Statistics on recipients of NSC research grants and research creativity awards 2019-2022**

2   1   1   Not yet due

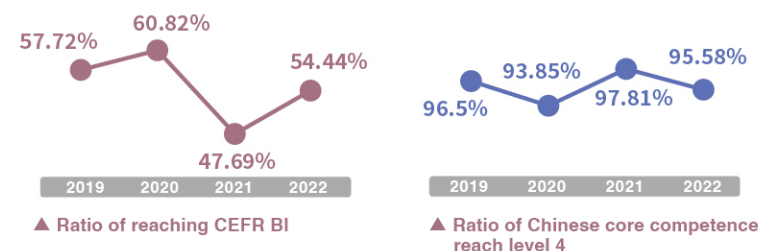|	2019	2020	2021	2022
No. Grant	26	22	25	22

■ No. Award Recipient   ■ No. Grant
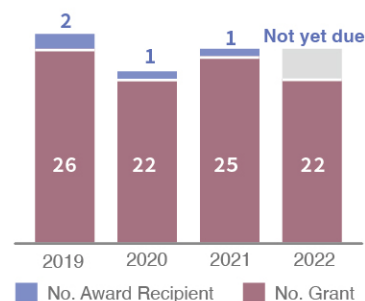
I. Chinese and English assessment results

a. English Test

● In order to improve students' English learning effect, according to "Requirements for Taking English Conversation and Reading Courses", students have to take a pre-test at the beginning of the first semester to understand their proficiency at their entry to NUK. Then they will take an English Test at the end of the second semester to check their learning effectiveness. However, the pre-test cannot be used as the basis for checking the graduation threshold.

● The University established "Measures of Implementing English Test". Accordingly, the school will hold English Test at the end of second semester every school year. The students who take "English Conversation and Reading" in the semester are required to take the test which follows the format of TOEIC. The total score reaches the standard stipulated in the implementation measures of the school's English proficiency graduation qualification test, that is, passes the school's graduation threshold.

● Regularly check the effectiveness of students' English learning: In 2019-2020, more than 55% of the first-year students reached CEFR B1 level or above. Since 2020, the teaching and examination schedule had been affected by the COVID pandemic. The pass rate in 2022 was 54.4% (Figure 3-10). The numbers of graduates of the 2019-2022 academic year of the day school undergraduates of who passed the English graduation threshold are: 935 in 2019, accounting for 97% of graduates; 896 in 2020, accounting for 95% of graduates; 966 in the 2021, accounting for 96% of graduates; 2022 expected to be announced in July 2023) (Attachment 3-11).

b. Chinese Writing Proficiency Test : At the beginning of each semester, a Chinese writing proficiency test is administered and scores are based on the school's Chinese Writing Proficiency Indicator and Writing Proficiency Test Standard. The four dimensions of writing proficiency and the content of the test include grammar and rhetoric, structure and organization of essay, depth and knowledge of the subject matter, and creative thinking and imagination. The percentage of students who have attained a grade 4 or higher in each of the core competencies of writing in 2019-2022 is above 90% (Fig. 3-11).

57.72%   60.82%   54.44%   47.69%

2019	2020	2021	2022

▲ **Ratio of reaching CEFR BI**

96.5%   93.85%   97.81%   95.58%

2019	2020	2021	2022

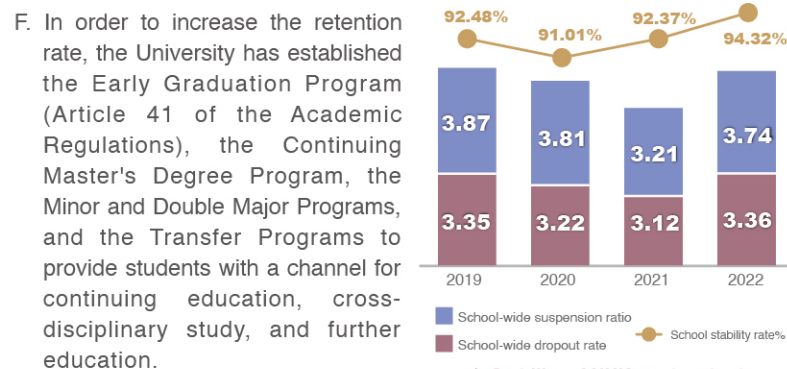▲ **Ratio of Chinese core competence reach level 4**

Students enroll in the Flexible Academic Program - Early Graduation

In order to shorten the length of study for day-time undergraduate students, according to Article 41 of the University academic regulations, students who meet the requirements of the required subjects and complete all the credits at the same time; have a total academic score of 80% or above; and each semester's academic performance ranks within the top 20% of the number of students in the year/class/section of the department or within the top 10% of the number of students in the year/class/section of the department can graduate a semester or a year early.

Analysis of the reasons for undergraduates dropping out from studies

A. The school-wide suspension rate decreased from 3.87% in 2019 to 3.21% in 2021. The daytime suspension rate decreased from 2.13% in 2019 to 1.56% in 2021.

B. The two main reasons for the suspension were "unsatisfactory academic performance" and "lack of interests", which accounted for 63%, 70%, and 58% of the number of suspensions in daytime undergraduate classes in 2019-2021.

C. The school-wide dropout rate decreased annually from 3.35% to 3.12% for 2019-2021. The dropout rates for daytime undergraduate classes were 2.23%, 2.15%, and 2.44% for 2019-2021 respectively.

D. The reasons for dropout were most frequently due to "lack of interest" (about 52% to 56% over the past three years), followed by "overdue suspension" (about 23% to 25% over the past three years).

E. The school enrollment stability rate of the previous school year for daytime classes decreased from 92.48% in 2019 to 91.01% in 2020, and then increased to 92.37% in the 2021 and 94.32% in 2022.
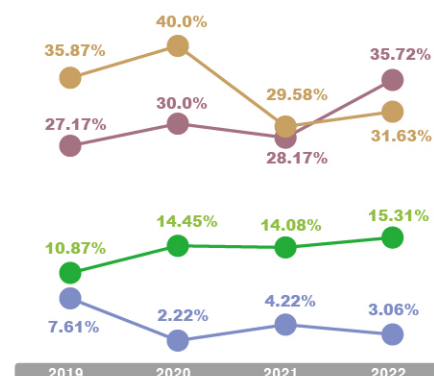
F. In order to increase the retention rate, the University has established the Early Graduation Program (Article 41 of the Academic Regulations), the Continuing Master's Degree Program, the Minor and Double Major Programs, and the Transfer Programs to provide students with a channel for continuing education, cross-disciplinary study, and further education.

92.48%   **91.01%**   **92.37%**   **94.32%**

	2019	2020	2021	2022
School-wide suspension ratio	3.87	3.81	3.21	3.74
School-wide dropout rate	3.35	3.22	3.12	3.36

School-wide suspension ratio
School-wide dropout rate
School stability rate%

▲ **Stability of NUK student body**

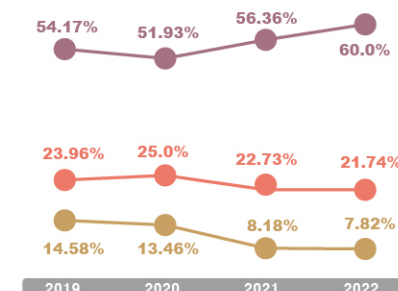| College	2019			2020			2021		
	No. early graduated	Ttl. graduate	%	No. early graduated	Ttl. graduate	%	No. early graduated	Ttl. graduate	%
Humanities & Social Science	2	229	0.87	2	222	0.90	3	220	1.36
Law	1	151	0.66	0	145	0.00	0	159	0.00
Management	1	189	0.53	1	194	0.52	4	204	1.96
Science	2	161	1.24	1	158	0.63	1	172	0.58
Engineering	4	235	1.70	5	222	2.25	0	249	0.00
Total	10	965	1.04	9	941	0.96	8	1,004	0.80

Note: 2022 information is expected to be released in October 2023.

▼ **Percentage of NUK daytime undergraduates taking leave**

40.0%
35.87%
30.0%
29.58%
35.72%
27.17%
28.17%
31.63%
14.45%
14.08%
15.31%
10.87%
7.61%
2.22%
4.22%
3.06%

| 2019 | 2020 | 2021 | 2022 |

Poor academic performance
Lack of interest
Sickness
Financial difficulty

▼ **Percentage of NUK daytime undergraduates' dropout**

56.36%
54.17%
51.93%
60.0%
23.96%
25.0%
22.73%
21.74%
14.58%
13.46%
8.18%
7.82%

| 2019 | 2020 | 2021 | 2022 |

Lack of interest
Suspension overdue
Academic performance

2. Graduate Education and Effectiveness

The University has established a comprehensive support and counseling mechanism for graduate students to assist them in the development of their academic learning and research, as well as a solid mechanism for academic integrity, which strengthens graduate students' awareness of and attitude toward academic ethics and ensures the quality of their degree theses. At the same time, the University actively responds to the government's policy development and the needs of industries by offering master's degree programs and industry-specific programs in order to cultivate talents for the development of the country.

Implement a quality assurance mechanism for graduate theses

In order to check the professional conformity and quality assurance of graduate theses, the "Key Points of Professional Conformity and Quality Assurance of Graduate Theses" have been established since 2021, and the related important mechanisms are as follows:

A. Process and mechanism of thesis submission by graduate students

  a. Prior to applying for a degree examination, verify that all required courses and credits for the semester have been completed.

  b. Ph.D. students are required to pass the Ph.D. Candidacy Examination prior to applying to take the degree examination.

  c. The deadline for application and examination should be in accordance with the regulations of the University's Graduate Degree Examination.

  d. Graduate students applying for a degree starting in 2021 should complete the two-stage dissertation originality comparison system (oral examination and final dissertation). Graduate students should submit the results of the dissertation originality comparison system (both including abstracts) for review by the supervising professor and the oral examination committee one week prior to the oral examination of the dissertation, and submit the results (both including abstracts) for review by the supervising professor and the director of the unit to which the student belongs at the time of submitting the final dissertation. Departments, institutes, colleges, and degree programs may set their own standards for thesis originality comparison.

B. Mechanism for reviewing the degree thesis for consistency with the field of specialization:

  a. In the selection of oral examiners, university teachers or researchers of Academia Sinica who have specialized research in the field of student research and have attained a certain rank or above shall be selected in accordance with Article 8 and Article 10 of Degree Conferral Act; and if special conditions such as "doctoral degree with academic achievements", "research field of rare or special disciplines, or professional practice with academic or professional achievements" are required, the selection shall be based on the consensus of the academic profession and peers. When selecting and hiring candidates, the University adheres to the consensus of academic professionals and peers and carefully recognize them.

  b. Departments, institutes, colleges, and degree programs set up their own checking mechanism to ensure that degree theses are in line with their professional fields.

  c. Departments, institutes, colleges, and degree programs should develop their own mechanism for handling disputes about the compatibility of degree theses.

C. Responsibility mechanism for quality assurance of graduate theses.

  a. If a graduate student's dissertation in any department, institute, college, or degree program does not conform to his/her major field of study or violates academic ethics, the supervising professor shall be held responsible and shall follow the regulations of the University's Academic Ethics Committee in examining the dissertation.

  b. If a graduate student's thesis does not conform to his/her area of specialization or violates academic ethics, the department, institute, college, or degree program shall review the thesis and discuss ways to improve the quality assurance mechanism.

D. Review mechanism for delaying or withholding publication of degree theses in the National Library.

  a. Departments, institutes, colleges, and degree programs shall comply with Article 16 of Degree Conferral Act, which stipulates that thesis shall be made public as a matter of principle, with the exception of not being made public.

  b. If a graduate thesis is delayed or withheld from publication, documentation of the reason for the delay shall be provided by the department, institute, college, or degree program through its own rigorous review mechanism.

A robust mechanism for reviewing and penalizing students for violating academic ethics

In order to fairly and objectively handle the cases of violation of academic ethics (including violation of academic ethics of doctoral and master's degree theses) by our current, suspended and graduated students during their studies, the University has formulated the "Key Points for Handling Cases of Students' Violation of Academic Ethics" in accordance with Article 17 of Degree Conferral Act, the "Measures for the Deliberation of Cases of Academic Ethics", and the "Regulations for the Implementation of Graduate Degree Examinations". The examination procedures and disciplinary mechanism for handling cases of academic ethics violation by students of the University are shown in Attachment 3-8.

4.4 Links of Counseling System

4.4.1 Psychological Counseling and Substance Abuse Prevention

▼

Psychological Counseling

The school's psychological counseling is based on the concept of three-tier prevention, with full-time and part-time counseling psychologists providing professional psychological counseling and psychiatrists on regular duty for physical and mental counseling; students can use the e-counseling reservation system to make reservations for counseling services such as psychological counseling, psychological testing, and counseling on mental health. Each semester, the school plans to organize counseling activities that include life education, sexuality education, depression and suicide prevention, career counseling, and counseling week to provide students with professional, sound, and diversified psychological support and assistance.

Academic Counseling

For students whose learning effectiveness needs to be strengthened, a comprehensive support and counseling mechanism is provided in accordance with the "Guidelines for the Implementation of Student Academic Counseling".

- Before the beginning of each semester, the list of students who have failed more than one-half of the subjects in the previous semester and their grades will be notified to department heads, instructors, students themselves, and the Office of Student Affairs; international students will be notified to the International Office; by the twelfth week of each semester, a midterm learning effectiveness warning is given through the instructors of each course and the list of students who have failed in midterm exams is sent to the relevant units. The Office of Student Affairs sends a letter of concern to the students, parents, and class advisors (the mechanism is shown in Attachment 3-3).

- Establish "Key Points for the Implementation of Student Academic Counseling"70, and the school continues to strengthen the mechanism for early warning of learning outcomes. The academic counseling mechanism consists of tutoring by seniors, tutors, one-on-one teaching, and online teaching. In addition to explicitly alerting students who have failed more than one-half of their subjects in the previous semester, the school also strengthens the "Potential Early Warning" mechanism to provide immediate academic counseling and tracking. Through the implementation of the mechanism of learning alert and academic counseling, the improvement rate of the first semester of the 111th academic year increased to 93.4%.

		Fall 2020	Spring 2020	Fall 2021	Spring 2021	Fall 2022
Counseling& Counseling Service	No. session	723	778	820	766	1005
	No. person	158	134	249	118	169
Student Counseling Activity	No. person	3765	950	3365	660	3438
	No. session	60	32	90	30	56

▲ Statistics of psychological counseling

Item	Spring 2018	Fall 2019	Spring 2019	Fall 2020	Spring 2020	Fall 2021	Spring 2021
Certainty Warning (A)	126	149	116	147	97	108	106

Item	Spring 2018	Fall 2019	Spring 2019	Fall 2020	Spring 2020	Fall 2021	Spring 2021
Potential Pre-warning	1,602	1,622	1,986	1,893	1,997	1,896	2,009
No. drop out due to final academic performance (B)	14	12	10	11	8	6	7
Improvement Rate (1-B/A) (%)	88.89	91.95	91.38	92.52	91.75	94.44	93.40

▲ Student Learning Warning and Improvement 2019-2022

Drug Abuse Prevention

In order to effectively prevent drug abuse among students, the school has actively implemented a three-tier prevention and counseling strategy. The first level of prevention is based on "education and publicity", which reduces the risk factors and increases the protective factors, and combines the joint efforts of teachers, parents and the community to cultivate students' ability to think correctly and refuse the temptation of drugs, as well as to strengthen individual counseling and visits by instructors, class advisors and school staff for students with a higher likelihood of drug abuse (the risk factor), in order to reduce drug abuse; the second level of prevention is based on "clearance screening" for early detection and early intervention, and screening for specific persons. The second level of prevention is based on the "Clearance Screening" for early detection and intervention, and screening of specific persons. The third level of prevention is based on the "Sun Ray Counseling", which combines medical resources to help students quit drugs.

4.4.2 Career Counseling

▼ ─────────────────────────────

The University organizes professional licensing courses, functional workshops, and corporate presentations to provide students with opportunities to meet with corporations and to shorten the distance between industry and education. Through the feedback of students' participation in activities and the cooperation of student self-governance organizations, the University seeks to find various corporations and industry seniors to share their experiences, so as to provide students with resources for their careers in conjunction with external resources.

● Through student organizations, activity questionnaires and feedbacks to understand the actual needs of the students, as well as combining the industry, alumni and various industries to share and explain, so that students can quickly understand the current situation of the industry, as well as their own capabilities and positioning. Through the sharing of alumni, not only can alumni and students be connected, but also the distance between the industry and the academia can be narrowed. Instead of the usual sharing by supervisors and managers, the alumni's experiences and advice are closer to the students to increase their interest and acceptance.

● Not only fresh graduates are encouraged to attend the briefings from enterprises, sophomores and juniors are also encouraged to learn about the market demand at an early stage, and to take relevant courses and enhance their own functions during their study period, which will help them to be more successful in their future job search. They also learned the importance of self-marketing through activities related to interviewing skills and résumé writing. In addition to the immediate needs of professional competence and common functions, we are able to effectively communicate our strengths to others. The activities also include the operation of basic digital tools, so that students can apply what they have learned in any industry and complement their studies.

● Utilize the MOE's UCAN platform and combine public and internal resources to provide students with career counseling, assisting them in exploring their career goals and enhancing their soft skills for the future workplace. In order to increase the response rate and popularity of students' UCAN, and to serve as the basis for the analysis of academic achievement and employment performance by the school's research on diversified functions, the University has integrated Freshman Week and planned a mechanism for faculty collaboration to actively promote the exploration of freshmen's interests, the common functions from freshman to senior year, and the testing of senior students' professional functions, which has increased the response rate from the average of 20% in the 109th academic year to 60%; and the response rate of freshmen exceeded 85%, which has achieved remarkable results. The response rate of freshmen has increased from an average of 20% in the 109th academic year to 60%.

In summary, in order to provide students with a comprehensive counseling mechanism, the school actively organizes supplementary courses and career counseling activities, encourages students to participate in the National Examination Counseling Classes, and advices students to participate in professional licensing courses, so as to broaden the path of students' graduation transition and strengthen students' professional abilities.

	2019	2020	2021	2022
Career counseling	19	6	15	24
New resident cultural exchange	2	6	10	9
National exam counseling	0	0	2	10
Others	45	41	56	73
Total sessions	66	53	83	116
Total participants	2,650	397	1,115	2,808

▲ Statistics of Counseling Activity 2019-2022

4.5 Student Employment Effectiveness

4.5.1 Student Internships

- All departments have formulated internship regulations and student internship committees to promote off-campus internships, and some departments have set off-campus internships as graduation thresholds or mandatory courses.

- In 2022, there are 100 student internship organizations, and some of them have been cooperating with the University for a long time and regularly recruit interns or graduates from the University every year, with the number of interns/times reaching 170 in 2011.

4.5.2 Graduates' Flows Survey

The school has been conducting a survey on the flow of graduates in accordance with the schedule of the Ministry of Education. In the past five years (2018-2022), except for 2021, when the proportion of students who refused to answer the survey increased due to the epidemic and only 2,200 copies were collected, the number of recovered copies in the other three years was maintained at an average of about 2,400, and the number of recovered copies in 2022 even reached 2,600 copies. the recovery rate of the survey for the first, third, and fifth years of graduation in 2022 was 82.46%, 67.24%, and 58.41%, respectively, 58.41%. The results show that the employment and further education status of the graduates in recent years are both around 43%, with the proportion of further education slightly higher by 1-2%.

- Comparing the salaries of 2018 graduates 3 years after graduation with those 1 year after graduation, the growth rate is 7.09%. Compared with the average salary 3 years after graduation, the average salary and growth rate of graduates of the College of Humanities and Social Sciences is the highest among the five colleges in 2016.

- Based on the benchmark of one year after graduation, it can be found that the graduate salary of master's degree holders is higher than that of undergraduates by more than $16,000.

- Retention rate: The retention rate of graduates in the first and third years after graduation will increase from 29.22% in 2014 to 38.74% in 2020. By combining local resources to cultivate talented people, the University is able to retain talented people to serve in the local community and increase the positive impact of its resources on the local community.

▼ Average Salary and Job Satisfaction after One Year of College Graduation
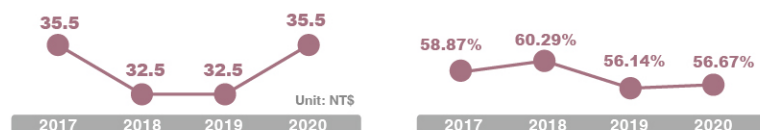
Notes: 1. The school years shown above are the graduates of the current school year and the results of the school flow survey one year after graduation.
2. Median Salary Calculated from Graduation Survey Salary Band Pacing.

▼ Graduate Students' Average Salary and Job Satisfaction after One Year of Graduation
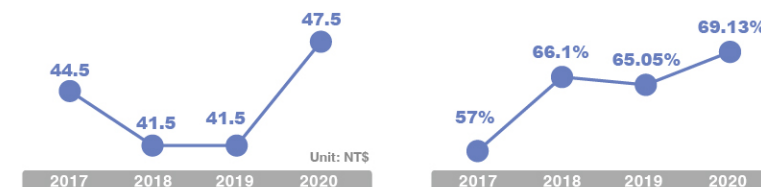
Notes: 1. The school years shown above are the graduates of the current school year and the results of the school flow survey one year after graduation.
2. Median Salary Calculated from Graduation Survey Salary Band Pacing.

4.5.3 Employer Satisfaction

In 2022, 92.68% of employers are satisfied with our alumni and 95.82% are willing to hire them. In addition to professional competence, the ability to express oneself in interviews is a key factor in hiring alumni, while creative thinking and problem-solving skills are the most common skills that employers would like to cultivate.

4.5.4 Start-up Company

- The University actively promotes new innovation among teachers and students. The Incubation Center introduces business ideas and industrial resources to the school's courses and programs, counsels and subsidizes teams to participate in national and international competitions, and forms entrepreneurial teams to compete for resources from the Ministry of Education's U-start and the National Science Council's Research and Entrepreneurship Programs (Sprout Project, Startup), while the school's derivative new innovation rules and regulations have been completed, creating a complete new innovation ecosystem on campus.

- With "Bionic Artificial Bone Powder", Prof. Wen-fu Ho of Dept. Chemical & Material Engineering and his research team succeeded in winning the NSC Research and Entrepreneurship Program - Startup Project, receiving a grant of $6.4 million and obtaining investment MOUs totaling $15 million from three companies. 2023 will continue to be the top case, and it is expected that the spin-off company will be formally established in 2024.

4.6 Sustainability of Academic Research

4.6.1 Sustained Research Funding

▼

Our faculty research is actively linked to the United Nations Sustainable Development Goals (SDGs) in response to global environmental change and sustainable development. The R&D Department counted a total of 162 projects related to the SDGs in 2022 by our faculty members in the implementation of NSC, the University-Industry Cooperation, and the MOE programs, with a total of 69 NSC projects with a total of $69,067,346; 82 industry projects with a total of $93,576,965; and 11 MOE projects with a total of $20,280,965. Of these, 69 projects were from the NSC, with a total amount of $69,067,346; 82 projects were from industry, with a total amount of $93,576,965; and 11 projects were from the Ministry of Education, with a total amount of $20,280,431. The SDGs corresponding to the SDGs were mainly SDG3 (Health and Well-being), SDG4 (Quality Education), SDG8 (Suitable Jobs and Economic Growth), and SDG9 (Industrialization, Innovation, and Infrastructure). The school will continue to encourage teachers to commit themselves to the school's programs. The University will continue to encourage teachers to engage in the field of sustainability research, and strengthen our sustainability research through various awards and grants.

4.6.2 Sustainability Academic Publications

▼

With five colleges: Arts and Social Sciences, Law, Management, Science and Engineering, our faculty members have been deeply involved in sustainability issues in recent years, such as the development of Southeast Asia, artificial intelligence, disaster prevention and control, sustainable living environment, humanities and technology, biomedical technology and artificial intelligence, social network innovation, science education, health and bionic technology, new energy and power development, and advanced structural integration, which are crucial to the future of sustainability. important themes for future sustainable development.
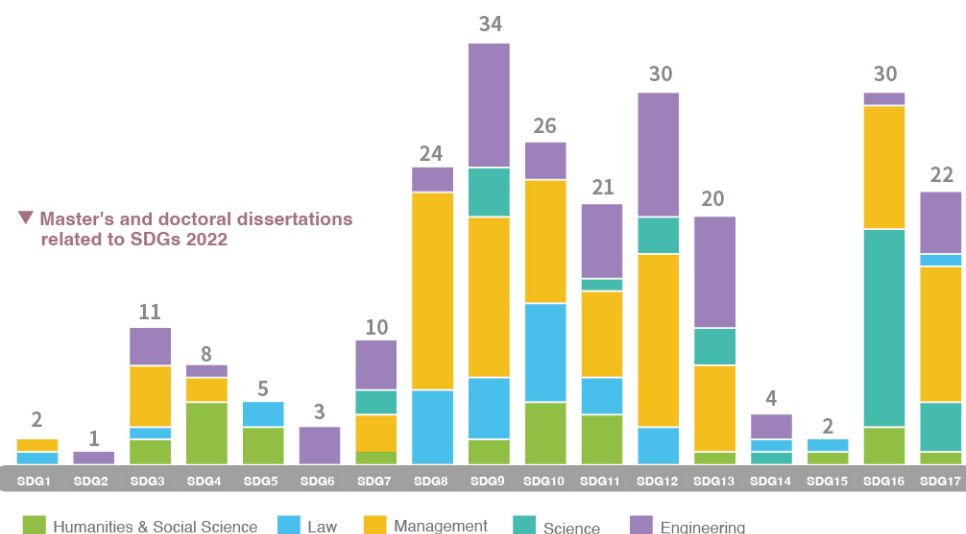
In 2022, a total of 266 papers related to SDGs were published, of which 138 are journal articles, 109 conference papers, and 19 books, with SDG4 (quality education), SDG9 (industry, innovation, and infrastructure), SDG11 (sustainable cities, towns, and communities), and SDG16 (peace, justice, and sound administration of justice) as the main directions of development. In the future, the University will continue to cooperate with major national policies and integrate the specialties of its research areas to respond to the global trend of sustainable development.

4.6.3 Results of the Sustainability Conference

▼

The University organized a total of 15 seminars on and off campus in 2022, with a total of 1,700 participants, including five international seminars with participants from seven countries, including the United States, Germany, the United Kingdom, Japan, Korea, Vietnam, and China. There were 4 conferences related to SDG4 Quality Education, 1 conference related to SDG5 Gender Equality, 1 conference related to SDG9 Industry, Innovation, and Infrastructure, 1 conference related to SDG11 Low Carbon Resilient Cities, 1 conference related to SDG16 Peace, Justice, and Sound Judiciary, and 8 conferences related to SDG16, which included SDG1, SDG1, SDG3, SDG10, and SDG17. The related topics also included SDG1, SDG3, SDG10, and SDG17, which continued to reinforce the spirit of our school's development goals and the United Nations' Sustainable Development Goals (SDGs).

	Domestic	International	Total
SDG4	2	2	4
SDG5	1	0	1
SDG9	1	0	1
SDG11	1	0	1
SDG16	5	3	8
合計	10	5	15

◄ **National University of Kaohsiung Conference Statistics 2022**

▼ **Master's and doctoral dissertations related to SDGs 2022**

Humanities & Social Science · Law · Management · Science · Engineering

Sustainability Environmental Performance

5.1 Smart, Green, and Sustainable Campus

5.1.1 Sustainable Campus Management

▼

Organizations Related to Campus Environment

1. The Campus Environmental Safety and Health Section : Its duties include safety and health, environmental protection and campus planning.

2. 9 Committees :

   A. Campus Sustainable Development Promotion Committee: The committee was established to respond to the United Nations' goal of sustainable development and to integrate sustainable development issues and resources across administrative and academic units.

   B. The Campus Sustainable Development and Planning Committee: to review and implement the ideals of environmental development and establish a mechanism for sustainable development of the campus.

   C. The Environmental Protection, Safety and Health Committee: to maintain the quality of the campus environment and ensure the safety of the laboratory operations of faculty-staff and students in accordance with relevant laws and regulations such as environmental protection and labor safety and health.

   D. The Energy Conservation Committee: to strengthen the management of energy and promote the rational and effective use of energy in accordance with the provisions of Article 6 Paragraph 1 of the Enforcement Rules of the Energy Management Law.

   E. The Biological Experiment Safety Committee: to ensure the experimental safety of faculty and researchers engaged in genetic recombination-related research in accordance with "Genetic Recombination Experimental Code" of MST.

   F. The Laboratory Animal Care and Use Committee: to supervise the management and use of laboratory animals in accordance with Article 16 Paragraph 1 of the Animal Protection Law, with English title "Nation University of Kaohsiung Animal Care and Use Committee (NUKACUC)".

   G. The Public Art Executive Panel: to budget public art funds and implement public art projects in accordance with "Regulations Governing the Installation of Public Artwork".

   H. The Public Art Selection Panel: to handle the selection and installation site of public art projects.

   I. The Public Art Appraisal Panel: to conduct appraisal after public art is installed.

University Self-defined Regulations

NUK currently has 6 regulations on campus environmental safety and health.

1. NUK Environmental Safety and Health Policy
2. NUK Safety and Health Management Regulations
3. NUK Code of Practice for Laboratory Safety and Hygiene
4. NUK Waste Disposal Act
5. NUK Measures for the Establishment of the Environmental Protection, Occupational Safety and Health Committee
6. NUK Measures for Establishment of the Environmental Safety and Health Center

Air Quality Status and Management

1. **Laboratory gas emission control :** The University has 94 laboratories equipped with forced air extraction equipment for exhaust cabinets: 55 in the College of Engineering and 39 in the College of Science. The gases are collected and discharged by a common pipeline in the activated carbon adsorption facility on the top floor of the buildings.

2. **Indoor air quality management :** "Indoor Air Quality Management Act" was implemented in 2012, and the first sites needing compliance with the "Act" were announced in 2014. The University Library is on top of the list for management. In order to protect the health of faculty-staff, students and the public, priority is given to installing a set of fixed-point continuous detection modules in the Library lobby on the second floor of the building in 2016 which was rated as a site with good indoor air quality in 2021.

▼ Data of Regular Inspection of Indoor Air Quality in the Library

test item	unit	test data	legal standard
CO2	ppm	504	1,000
CH2O	ppm	<0.06	0.08
PM10	µg/m3	31	75
Bacteria	CFU/ m3	564	1,500

▲ Indoor air quality real-time monitoring panel

▲ Good indoor air quality certificate

Occupational Safety and Health Management System

In order to ensure the safety of the University faculty and students, in accordance with the occupational safety and health laws and regulations and the University's applicable workplace safety and health code, the laboratory safety and health and campus inspections are regularly implemented, following the authority and the MOE's management and inspections to ensure the safety of all faculty members and reduce the occurrence of disasters. In addition, the University cooperated with MOE and the Labor Inspection Office of the Kaohsiung City Government to implement the campus safety and health guidelines for the Southern Alliance of Colleges and Universities.

1. **Management organization :** In order to integrate the management of workplace safety and health, toxic chemicals, radiation, and fire protection, the University set up an Environmental Protection and Safety and Health Committee in accordance with relevant laws and regulations. The President presides over the quarterly discussions on major environmental safety policies and topics which are recorded and compiled for future reference. The Committee includes the President as the chairperson, 3 administrative heads, 7 faculty representatives, 1 staff representative, 1 student representative and 1 occupational safety and health nurse, totaling 13 members.

2. **Establishment of occupational safety and health management system :** Establish and implement occupational safety and health management plans based on the Occupational Safety and Health Act, including management of machinery and equipment, marking and general knowledge of hazardous and harmful materials, planning and measurement of sampling strategies for hazardous working environments, and safety and health education and training. Formulate safety and health policies to announce to faculty, staff, students and all contractors. In addition, NKU Safety and Health Work Code was formulated in accordance with the Occupational Safety and Health Law, and was revised and approved by the administrative meeting on December 9, 2018, and reported to the Labor Inspection Division of the Labor Bureau of Kaohsiung City Government for reference.

   A. NKU occupational disaster statistics are regularly compiled by the Environmental Safety and Health Center on the Internet to report the monthly occupational disaster statistics, and keep records for the authority in charge to check. No accidents occurred in 2021.

▼ Statistical analysis of accidental injuries

	教　師		職　員		校聘人員	
	男	女	男	女	男	女
Employee Disabling Frequency Rate (FR)	0	0	0	0	0	0
Employee Disabling Severity Rate (SR)	0	0	0	0	0	0
Incidence rate	0	0	0	0	0	0
Absenteeism rate	0%	0%	0%	0%	0%	3%
Total death	0	0	0	0	0	0

Note:
FR & SR do not include traffic accidents in commute

1. FR= number of disabling injuries/Number of man-hours worked
2. SR = days lost in a year due to accidents x 1000,000/number of man-hours worked
3. Absenteeism: Occupational Sickness Leave + Sick leave/total period (yearly work day x number of the gender) x 100%
4. The total working hours are accumulated based on the monthly working hours data of Personnel Office

B. Regularly and occasionally conduct environmental safety inspections of experimental sites, assist in the improvement of laboratory shortcomings and review the progress of improvement for unqualified items, and cooperate with the Laboratory Safety and Health Certification System promoted by MOE.

C. The Environment Safety and Health Section regularly cooperates with MOE to declare the number of dangerous machinery and equipment in the University practice (study) sites in April and October yearly.

▼ Statistics of dangerous machinery and equipment

Lab name	Equipment	Type	No. of room
Wood & Bamboo Design Studio	Grinding machine *1	danger	1
Wood & Bamboo Design Studio	Circular saw for wood *1	danger	1
Magnetism Semiconductor Lab	2nd pressure vessel*1	danger	1
Nano-Optoelectronic Lab	2nd pressure vessel*1	danger	1
Microbial Biochemistry Lab	Autoclave*1	danger	1
Plant Biochemical Lab	Small pressure vessel*1	danger	1

D. For machinery, equipment or appliances specified by laws and regulations, it is required to gradually improve appropriate protective facilities, and to post standard operating procedures, where the machinery and equipment are clearly visible to comply with the regulations.

E. The mechanical equipment and appliances used in the contracted project are stipulated in the contract that the contractor must meet the legal standards and regulations, and the contractor will control the usage; otherwise, they will not be allowed to enter the site.

3. **Implement the management of hazardous and harmful materials :**

   A. The chemicals in the laboratory shall be classified and labeled according to "Hazardous Chemical Labeling and General Knowledge Rules" and "NKU Hazardous and Harmful Substances General Knowledge Plan", implementing "Globally Harmonized System of Classification and Labeling of Chemicals (GHS)". The University adopts laboratory supervising, educational training, and requires drug suppliers to cooperate in improving chemical labeling, so that the University drug management can gradually comply with the regulations of GHS.

   B. The University labs list hazardous chemicals and safety data sheets for the reference of lab personnel. The storage of hazardous and harmful materials is managed by the guidance of a supervisory laboratory according to the attributes of the drugs. In environmental safety inspection, they have to confirm the records are regularly renewed in compliance with laws and regulations. In addition, hazard warning signs are set up in controlled areas in accordance with laws and regulations for special hazardous workplaces.

   C. Lab refrigerator storage cabinets clearly prohibit the storage of food in accordance with laboratory rules, and no eating or drinking is allowed in the laboratory.

4. Management of Toxic Chemical Substances :

A. The school applies for permits for use of all toxic chemicals from the Environmental Protection Bureau of Kaohsiung City Government in accordance with laws and regulations. There are currently 80 kinds in total. In order to control the purchase of toxic chemical substances, records are filed and kept in accordance with regulations. The information is compiled and reported to the Environmental Safety and Health Committee in session.

B. In order to integrate and manage the safety and health, toxic chemicals, and radiation at the laboratories, the Environmental Protection and Safety and Health Committee is set up in accordance with statutory regulations, and meets quarterly.

C. The Campus Environmental Safety and Health Center regularly visits the operating sites of toxic chemical substances to understand the actual operating conditions of the laboratories to provide guidance and make improvements.

5. Hazardous work safety and health management :

A. Before assessing hazard risk in the experiment performed by every lab, each lab should first check the experimental conditions, and then the staff of the Environmental Safety and Health Center will assist in completing in records according to the assessed hazard level. Afterwards, it will evaluate whether construction improvement or personnel improvement is needed. The Environmental Safety and Health Center will assist completing the necessary improvement.

B. Formulate standard operating procedures for various environmental safety and health services, and publish them on the website of Environmental Safety and Health Center for enquiries and follow-up by faculty, staff and students.

C. Implement lab work environment measurement in April and October yearly. The types, dosages and frequencies of hazardous substances in each lab are used to evaluate laboratory hazard exposures and be used as sampling points for the work environment. If the results or work environment measurement are not in compliance with laws and regulations, the deficiency will be immediately improved to meet the permissible concentration standard of harmful substances.
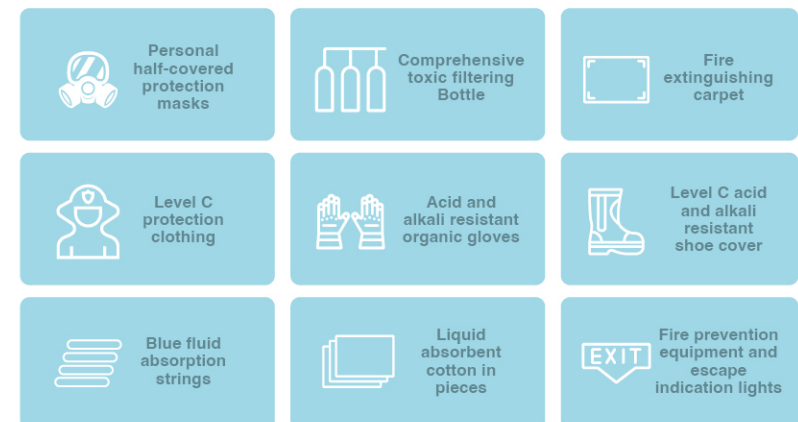
6. Occupational disaster prevention measures :

A. Regularly test the radiation of the working environment.

B. Fire safety management :

a. A fire protection plan is established and implemented in accordance with "Fire Services Act".

b. The fire prevention facility is entrusted to the fire prevention equipment company to carry out inspection, maintenance and supervision monthly. When any malfunction occurs, it will be immediately repaired to maintain normal functions.

c. The school fire safety equipment is regularly inspected, maintained and repaired, and a fire safety inspection report is prepared.

C. Distribution, labeling and management of protective gear :

a. The school is equipped with protective items and emergency equipment, including chemical absorbent cotton, protective clothing, emergency oxygen supply devices, and gas masks, which are placed in accessible locations according to regulations and clearly labeled.

b. The laboratories are equipped with sufficient personal protective equipment, first aid kits and fire extinguishers, and the laboratory rules are required to clearly stipulate that appropriate protective equipment should be put on when entering the laboratory.

c. Emergency shower and eyewash equipment are installed outside the lab, which the Campus Environmental Safety and Health Center regularly inspects and repairs. When malfunction occurs, the lab will immediately ask a professional company to repair it.

d. Personal protective equipment and fire prevention facilities in the lab should be managed by the lab itself for maintenance and self-inspection; the first aid kits should be replaced by the lab itself.

e. Accident investigation: When an accident occurs in the University, the person who finds it must report to the department supervisor and immediately report to the Environmental Safety and Health Center. The department supervisor should take response and handle in accordance with the relevant emergency response procedures. After the accident is handled, the Environmental Safety and Health Center convenes relevant departments to investigate, analyze and confirm the circumstances and causes of the incident, and submit the "School Disaster Accident Report" to the management representative for confirmation, review and improvement. If necessary, the report is submitted to the Environmental Protection and Safety and Health Committee for explanation.

▼ **List of lab protective gear**

Personal half-covered protection masks	Comprehensive toxic filtering Bottle	Fire extinguishing carpet
Level C protection clothing	Acid and alkali resistant organic gloves	Level C acid and alkali resistant shoe cover
Blue fluid absorption strings	Liquid absorbent cotton in pieces	Fire prevention equipment and escape indication lights

7. Safety and health education and training :

A. For freshman education and training, the Safety and Health Center hires experts and scholars in the field of occupational safety to schedule 3 hours of related courses every academic year. In addition, 3 hours of safety and health education and training are scheduled for lab personnel to strengthen the implementation of lab safety and health. In addition, lab instructors are invited to promote the safety and health rules of each lab for students in the first week of the lab course.

B. Ionizing radiation education and training are regularly held once a year for 3 hours. All faculty, staff and students who use radiation equipment must attend.

8. Occupational safety management of contractors :

A. For the safety and health of the faculty, staff, and contractors, our school, in accordance with Article 26 of the Occupational Safety and Health Law, when all or part of the University business is handed over to contractor, the contractor shall be informed in advance of the working environment, hazards, and safety and health requirements to take necessary measures. Before each outsourcing work is delivered to the contractor, both parties must jointly sign a contract. During the contract period, in addition to complying with the provisions of the contracted project, they must abide by the government's occupational safety and health, environmental protection, and fire protection laws and other relevant laws and regulations.

B. The school also requires the contractor to designate the person in charge of the contracted project in the design phase and before the construction of each project phase for the public construction project in the school, and to act as command, supervision and coordination work. According to its design planning, construction method or operation type, reports on hazard identification, risk assessment, and control measures taken based on the assessment results are submitted, and the formal construction can be carried out after the school's contracting unit has reviewed and confirmed it. In 2022, there was no occupational accident in the contracting of on-campus projects.

5.1.2 Smart Green Campus and Buildings

Every new school building has been awarded the Green Building Label since 2012, and the Student Activity Center in 2022 has been awarded the Smart Building Label in addition to the Green Building Label.

▼ List of green buildings

Building	Date	Award
College of Humanities & Social Sciences	Oct. 2012	9 indicators of Gold Label Green Building
	2013	Participated in the Kaohsiung Green Building Award and won Public Building Award and Rainwater Storage Facilities and Reuse Award
Administration Building	Sept. 2014	9 indicators of Bronze Label Green Building
Second Student Dormitory	April 2016	Qualified Green Building Label for Dormitory
Student Activity Center	July 2022	Basic Type of Qualified Green Building Label
	Dec. 2022	Smart Building Label

5.1.3 Water Resource Management

Water resource treatment system

The main source of water for the University comes from the tap water provided by District 7 of Taiwan Water Supply Company. The main source of water comes from the Gao-ping River, which is not significantly affected by the water intake.

Since 2010, the school has cooperated with government agencies and implemented the Four-Saving Plan. Although the Plan ended in 2015, it has continued to implement water-saving measures. The annual water consumption will be reduced by 2% compared with the previous year. It intends to review the annual water conservation goals, but in recent years, the weather has been hot, and water consumption increases year after year. Due to the pandemic in 2020-2021, online teaching was adopted. The faculty and students were not on campus, and the consumption of water decreased significantly.

Reclaimed water system :
The water treated by the school sewage treatment plant meets the discharge water standard. Except for heavy rain, 100% is recycled and stored in the middle tank of the sewage treatment plant and used as the campus ecological water system, irrigation, and plants to use.

Rainwater recovery system :
The rainwater storage and reuse system set at the College of Humanities and Social Sciences is mainly to replenish the artificial lake nearby as an ecological water system.
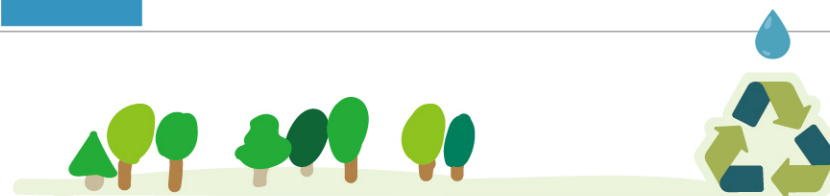
Water-saving facilities :
Budgets are made year by year to replace the urinals and toilets of male and female toilets and the taps on each floor to water-saving equipment.

Specific improvement measures for water saving in toilets include the widespread installment of two-stage flushing toilets or water-saving toilets

Year	Billing interval	Meter unit	Water saving rate calculated	Water recovery volume	Water recovery PCT
2015	2014/11/19~2015/11/23	163.032	—	—	—
2016	2015/11/24~2016/11/22	188.022	-15.33%	117.309	**62.39%**
2017	2016/11/23~2017/11/21	176.309	6.23%	111.621	**63.31%**
2018	2017/11/22~2018/11/21	203.49	-15.42%	171.938	**84.49%**
2019	2018/11/22~2019/11/21	204.291	0.00%	179.294	**87.76%**
2020	2019/11/22~2020/11/21	152.389	25.41%	141.934	**90.00%**
2021	2020/11/22~2021/11/21	139.024	8.77%	128.551	**92.47%**
2022	2021/11/22~2022/11/21	182.021	-34.70%	172,489	**94.76%**

▼ Campus Internal Water Cycle

國立高雄大學校園水內部循環系統
Internal Cycle System of Water on Campus of National University of Kaohsiung

▼ Chart of Water Consumption

Discharge divided by end point

Water withdrawal (Divided by source)		Discharge (Divided by end point)	
Surface water + ground water + sea water	0	Surface water + ground water + sea water	0
Produced water (total)	0	Third-party water used by other organization	0
Third-party water (total)	152.389	Third-party water (total)	9.813
Total water withdrawal	152.389(*1)	Total discharge	9.813
Total water consumption(*2)		142.576	

*1: All fresh water (≦1,000mg/Total dissolved solids)
*2: Total water consumption =total water withdrawal- total discharge
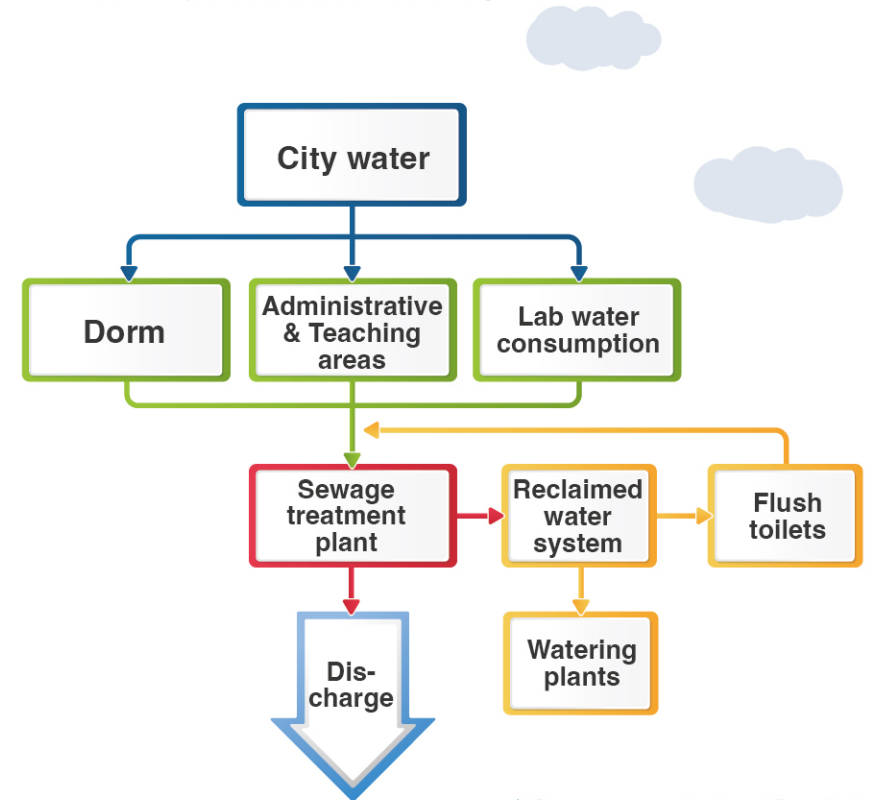
▲ Campus sewage treatment flow chart

Sewage treatment

The University sewage sources include laboratory washing waste, dormitory and office sewage, which are collected through pipelines and sent to the sewage treatment plant for treatment. The reclaimed water is mainly used as supplementary water for grass sprinkler and ecological waterways. When there is excessive displaced water, it will be discharged to the drain on the north side of the campus and eventually into the Dian-bao River.

In addition to the traditional two-level biological treatment, the school sewage treatment plant is added with three-level treatment of filtering and ozone sterilization. The quality of the discharged water meets the discharged water standard revised on April 29, 2019. The discharged water standard is based on Article 7 Paragraph 2 of Water Pollution Control Act.

▼ List of removal rates of sewage treatment plant

Water quality standard	Removal rate
BOD	76.3%
COD	66.8%
SS	72.5%
Escherichia coli	99%

▼ Discharge water quality test data and discharge water volume

Test Item	2020	2021	2022	Discharge standard
BOD(mg/l)	6.55	10.5	15.5	30
COD(mg/l)	31.9	39.9	58.1	100
SS(mg/l)	6.6	7.55	8.2	30
Escherichia coli(CFU/100mL)	34,250	23,988	33,900	200,000
Grease(mg/l)	1.55	0.7	1	10
Water temperature(oC)	27.3	28.7	27.9	35
PH	7.5	7.6	7.7	6~9
Discharge volume(CMD)	19,187	9,813	14,818	-

Drinking water

The University has a total of 135 drinking fountains, and outsources regular monthly maintenance and regular replacement of filter materials, tank cleaning and disinfection. In accordance with the current drinking water laws and regulations, at least 1/8 of drinking fountains are inspected quarterly, i.e., 17 units, but the actual number inspected is 18 units. Water quality testing is based on the principle of sampling at least two drinking fountains in each building and once a quarter.

▼ Drinking Fountain Test Results

Test Item	2020	2021	2022	Standard
Escherichia coliCFU/100mL	<1	<1	<1	6
Total plate count CFU/mL	<1	<1	<1	Nil

5.1.4 Waste Management

The University's waste output can be roughly divided into general business waste and recyclables generated in the dormitory and office, and hazardous business waste generated in the laboratory. General business waste is entrusted to the manufacturer to be transported to the incineration plant for incineration; the harmful industrial wastes are cleaned and transported by qualified cleaning and transportation companies to Resource Recovery Plant of Environmental Resources Research and Management Center, National Cheng Kung University for disposal.

▼ Waste treatment flow chart
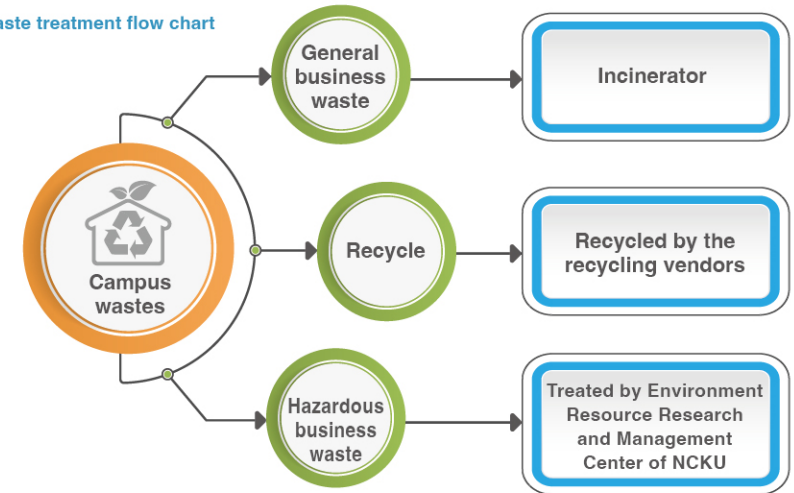
▼ List of general industrial waste disposal

Hazardous waste			Non-hazardous waste		
Treatment	On-site	Off-site	Treatment	On-site	Off-site
Incineration (incl. recycling)	-	7.487	Incineration (incl. recycling)	-	274.65
Landfill	-	-	Landfill	-	-
Others	-	-	Others	-	11.928
Subtotal	-	7.487	Subtotal	-	286.58
total		7.487	total		286.58
Total waste			294.065		

Note: 1. Waste weights are in metric tons.
2. "On-site" is within the physical boundaries or administrative control of NUK; "off-site" is outside NUK's physical boundaries or administrative control.
3. All industrial wastes are sent to the entrusted manufacturer for disposal.
4. NUK has no transfer during disposal.

5.1.5 Strategy of Zero Emission Vehicles

▼

| Install 10 U-Bike stations and the 30 minutes are free for students |

1. Combine public resources to promote ZEV : Starting from 2020, the school has introduced the Kaohsiung City Government's resources to set up U-BIKE Smile Bikes on campus, and in August 2021, the 1000th Kaohsiung U-BIKE Celebration will be held at the school.

   A. As of March 2022, 10 stations are on campus, located throughout the academic buildings and student dormitories, with over 200 bicycles available for use by students, faculty, and visitors. All stations are equipped with bicycle racks. Students can borrow bikes for 30 minutes for free with the student ID.

   B. Weblinks :

      a. Celebrating U-BIKE's 1,000th Station News Website:
         https://www.nuk.edu.tw/p/404-1000-48183.php?Lang=zh-tw

      b. On campus UBIKE website :
         https://ga.nuk.edu.tw/p/412-1010-4397.php?Lang=en

      c. Kaohsiung City Government promotes ZEV discount website :
         https://www.men-go.tw/#/MProductList

2. Increase the price of car parking permits by more than 30% to indirectly reduce the number of vehicles entering the school. :

   A. Amendments to increase the fees of car permits and temporary parking on campus, and encourage staff and students to use ZEV transportation to enter and move around campus to reduce the rate of carbon dioxide emissions on campus.

   B. Weblink : https://ga.nuk.edu.tw/p/405-1010-3670,c533.php?Lang=zh-tw

3. Help publicize incentives for riding buses, subways, light rail, and public bicycles :

   A. In line with the Kaohsiung City Government and Kaohsiung Rapid Transit Corporation's low-fare policy, teachers and students are encouraged to use public transportation.
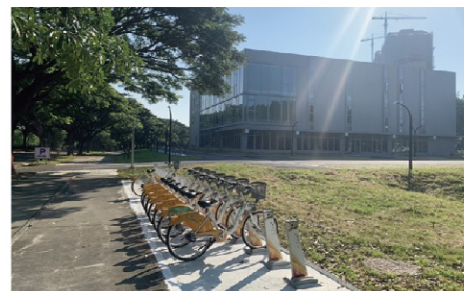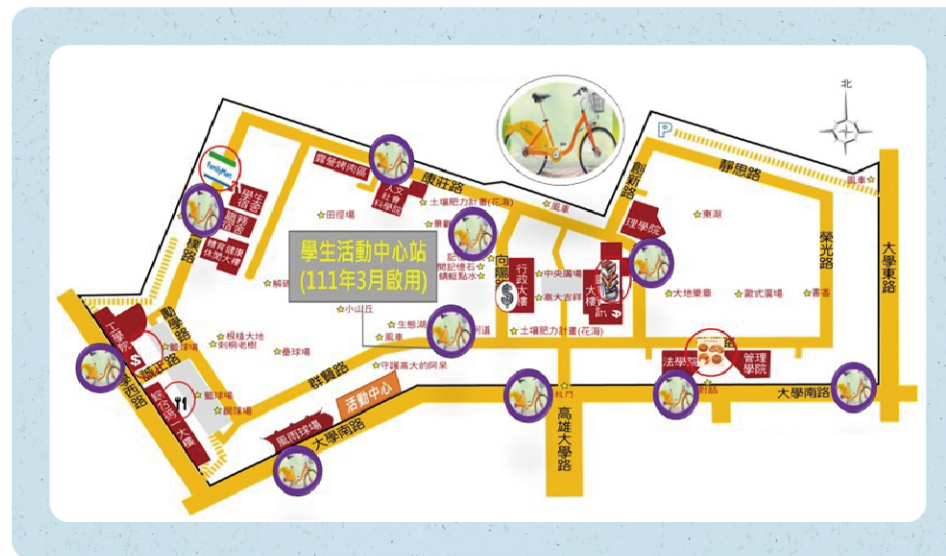
   B. Weblink : https://www.men-go.tw/#/MProductList

4. Promote Taxi-Sharing System :

   A. In line with the policy of the Kaohsiung City Government's Transportation Bureau, the school offers discounted fares to encourage students and faculty to switch to public transportation after sharing a taxi ride in order to reduce the use of private transportation. There are five transportation locations in the School of Management, the School of Science, the School of Humanities and Social Science, the student dormitories, and the General Building.

   B. Supporting Information (News) :
      https://www.nuk.edu.tw/p/406-1000-14986,r77.php?Lang=zh-tw

▼ U-Bike stations are installed on campus to share with the public

▲ U-Bikes at Student Activity Center

▲ U-BIKE at Adminstrative Building

▲ Taxi Sharing Plan

5.2 Energy and Climate Action

5.2.1 Climate Change Response Strategy

▼

In response to global climate change and in line with the direction of the national energy and emissions reduction policy, President Yue-Tuan Chen signed the "2050 Net Zero Emissions Declaration" and goal during 2022 Sustainability Week. In addition to strengthening the concept of a sustainable university and the mutual support of curriculum, teaching, and administrative systems to implement campus climate action, specific details will be implemented in the 2023-2026 mid-term plan. Therefore, in 2022, the response strategy is to review the current status of the sustainable campus through a detailed inventory, which can be divided into two major parts, namely the campus environment and the SDGs related courses.

Construct Sustainable Campus Environment

The University is committed to practicing the SDGs spirit and a green university with friendly campus. Therefore, the current environmental inventory of the campus can be divided into external feedback, energy equipment, smart monitoring system, and water-saving facilities. The description is as follows

External feedback

After years of efforts, the University has been recognized with the Green Building Label, Local National Important Wetlands, and Project Quality Awards in the areas of construction, health, and animal and plant habitats. In the ranking of sustainability programs, the University has also been recognized by Times Higher Education for its University Impact Rankings, the best millennial universities 2019, QS World University Rankings, and other rankings. In addition, since 2019, the University has published a sustainability report every year focusing on the sustainability environment of the previous year, and so far, it has won three gold and one silver awards in Taiwan Corporate Sustainability Award for Corporate Sustainability Report.

Energy Equipment

In line with the school's policy of creating green energy, the school has inventoried the available roofs of the school to install solar photovoltaic panels, each with 2,217.055kWp, including bartering and applying for green energy certificates.

▼ List of solar photovoltaic power generation equipment

Site	Total installed capacity (kwp)	Mode of operation
College of Law	26.4	REC
Admin. BL	10.0	REC
College of Engineering	209.45	FIT
Motor-and-Bicycle Parking Lot	246.62	FIT
Library & Info BL	348.395	FIT
College of Management	93.81	FIT
1st General BL	154.875	FIT
Admin. BL	57.525	FIT
Student Dorm	56.64	FIT
Staff Dorm	50.445	FIT
Sport & Leisure BL	637.56	FIT
Student Activity Center	325.335	FIT
Total	**2,217.055**	

**FIT** : Feed-in Tariff   **REC** : Renewable Energy Certificate

▼ Solar Panels

Build a Smart Power Monitoring System: EMS Central Power Management System

1. **Smart Power Consumption Framework:** All 12 buildings in the university are equipped with smart digital meters to monitor the total power consumption, air-conditioning power consumption, and power consumption in some areas of the buildings. The EMS central power management system collects, records, calculates, and analyzes data from digital meters across the campus, and further manages the loading and unloading of central air conditioners and stand-alone air conditioners in each building.

2. **Smart Electricity Management and Tariff Billing System:** Used in the management of electricity consumption in student accommodation, the system can provide users with a systematic history of electricity consumption, alert notifications, achieve the goal of energy-saving smart living, and implement user billing. Optimize the electricity billing process to enhance the convenience of life.

▼ 1st Student Dorm & General Dorm installed with 266 digital meters
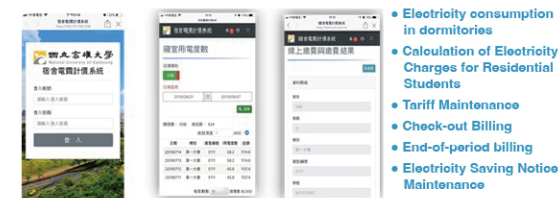
- Electricity consumption in dormitories
- Calculation of Electricity Charges for Residential Students
- Tariff Maintenance
- Check-out Billing
- End-of-period billing
- Electricity Saving Notice Maintenance
- Payment Status Inquiry

▲ Smart Electricity Management and Tariff Billing System

3. **Multi-payment system:** Combine the digital student ID card with the multi-payment system to notify students of the amount of electricity bills due and information on electricity consumption, saving labor management and billing costs.

4. **Smart Cloud Management System:** Use meter data to analyze the electricity consumption of dormitories and draw visualized charts. The administrator can send out real-time power consumption alerts in accordance with the energy-saving policy to urge students to adjust their power consumption.

5. **Classroom Air Conditioning Control System:** In accordance with the class schedule of each semester, the air conditioning system delivers and cuts off power according to whether the classroom is in session or not, so as to avoid waste of electricity when class is not in session.

▲ Smart Cloud Management System Webpage
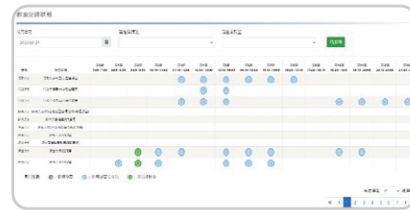
▲ Classroom Air Conditioning System Website

Water Conservation Facilities

Since 1999, the school has been cooperating with government agencies and the school's Four-Saving Plan. Although the project ended in 2015, the school has continued to implement the following water conservation measures, with the principle of reducing annual water consumption by 2% compared to the previous year, and reviewing the annual water conservation target on a yearly basis in accordance with the effectiveness of the implementation.

1. **Reclaimed water system:** The water treated by the NUK sewage treatment plant meets the discharge water standard. Except for heavy rain, 100% is recycled and stored in the middle tank of the sewage treatment plant and used as the campus ecological water system, irrigation, and plants to use.

2. **Rainwater recovery system:** The rainwater storage and reuse system set at the College of Humanities and Social Sciences is mainly to replenish the artificial lake nearby as an ecological water system.

3. **Water-saving facilities:** Budgets are made year by year to replace the urinals and toilets of male and female toilets and the taps on each floor to water-saving equipment.

4. Specific improvement measures for water saving in toilets include the widespread installment of two-stage flushing toilets or water-saving toilets

▲ Rainwater reuse equipment, 1st student Dorm
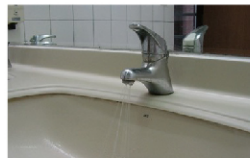
▲ Water saving tap

Plan and develop a school-based curriculum on SDGs sustainability issues

Overall Curriculum Planning Guidelines

With the 2018-2022 Higher Education Sprout Project, the University has identified the core values for the next five years of development: guided by the United Nations' Sustainable Development Goals (SDGs), and adopting "SDGs-inside" as the DNA of the University's development in teaching, research, organizational development, and partnership. Based on this concept, the University has identified the following key directions for its future development, which are aligned with the four major directions of Sprout Project: implementation of teaching innovation (SDG 4 Quality Education), development of school characteristics (SDG 17 Global Partnerships), university social responsibility (SDG 11 Sustainable Communities and Cities), and public nature of higher education (SDG 8 Dignified Employment and Economic Growth).

For the overall curriculum design from 2021 to 2022, in addition to continuing to implement the "SDGs-Inside" concept, using IOOI (Input, Output, Outcome, Impact) as a way to assess the effectiveness of the Sprout Project and students' learning, and to develop a data-driven decision-making model, the school will also implement the vision of NUK Sprout Project 2.0 "Design for the Future" through four main axes and 14 action plans.

NUK Sprout Project 2.0 4 main axes & 14 action plans

Axis 1 – Design for Education
1-1 Data Science Guided Learning Adaptation and Autonomy
1-2 Humanities & technology interdisciplinary professional narrative & whole-person liberal arts literacy
1-3 If School & Innovation base
1-4 Interdisciplinary forward-looking & specialized talents
1-5 Teachers' Innovative Teaching Practice, Research and Diversified Promotion.

Axis 2 Design for Sustainability
2-1 Improve international college enrollment & strengthen international exchange
2-2 Expand the Characteristic Sustainable University
2-3 Cultivating SDG Dialogue Practitioners

Axis 3 Design for Equality
3-1 Comprehensive assistance for economically or culturally disadvantaged students
3-2 Co-creation driven by partnerships both inside & outside the school.
3-3 Research Governance & Access to Information

Axis 4 Design for Community
4-1 Social Design Practice-oriented Co-education through USR HUB
4-2 Reinforce university social responsibility through practice & competition
4-3 Strengthen the cooperation network of the local national education end

Offer in-depth courses on environmental sustainability and carbon storage

In order to cultivate students' professional competence in sustainability issues, the university offered sustainability-related courses in the 2021 academic year (August 2021-July 2022), using natural ecology, human-environment relationship, and sustainable development as the themes of the courses, to guide students to ponder on the relationship between human beings and nature as well as sustainable development, and to put environmental protection into practice in their daily lives. There are a total of 305 courses. The titles of 17 courses are summarized in the table below.

Title	Credit	No. participant
Sustainable Development Issues in Taiwan	3	30
Environmental & Resources Economics	3	13
Environmental Ethics	3	61
Environmental System Analysis	3	11
Architectural environment assessment	2	52
Systems Of Environmental Control	2	27
Introduction to Climate Change Studies and Sustainability	2	14
Investigation the Earth	2	51
Environmental Protection	2	60
Reading the Environment	2	57
Sustainable Computing: Applications and Practices	3	23
Specific Topics on Low Carbon Architecture and Wood Construction	3	10
Climate-Responsive Design and Discussion	3	11
Topics of European Sustainable City	3	11
Sustainable Development in Corporate Management Practices	3	9
Special Topics on Sustainable Development of Tourism	3	10
Sustainable Development of Tourism & Recreation	3	5

In Fall 2022, a course entitled "Introduction to the Calculation and Application of Carbon Storage" was offered at IF School, which is the first step in nurturing students to become seed professionals in carbon inventory.

Since the University has more than 8,000 forest plants that contribute significantly to the storage of carbon dioxide in the atmosphere, through the objectives of this course, students will not only understand the basic concept of carbon storage, but also practice measuring the carbon storage of a single plant on campus hands-on. The results of the hands-on work will be left on the introduction of the trees, and the connection between students and the school will be closer.
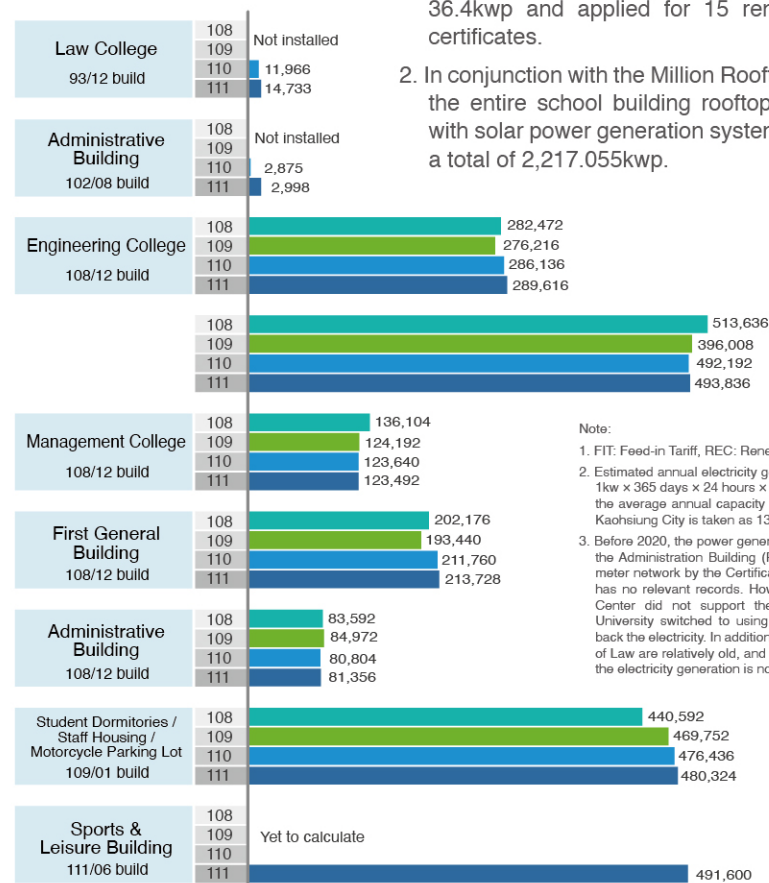
▲ Achievement

Encourage faculty to work on sustainability issues and set up research centers

NUK faculty members are committed to research on sustainability-related issues and have established the Disaster Prevention and Rescue Technology Research Center and the New Energy and Electricity Development Research Center to provide the public, businesses, academia, and the central and local governments with the latest information, advice and policy recommendations on energy development, renewable energy, carbon reduction certificates, carbon footprints, and disaster prevention practices.

5.2.2 Green Energy

1. The Administration Building and the Law School set up their own solar photovoltaic panels to generate electricity with a total capacity of 36.4kwp and applied for 15 renewable energy certificates.

2. In conjunction with the Million Rooftop PUs Project, the entire school building rooftops are equipped with solar power generation system bid lease, with a total of 2,217.055kwp.

	108	109	110	111
Law College 93/12 build	Not installed		11,966	14,733
Administrative Building 102/08 build	Not installed		2,875	2,998
Engineering College 108/12 build	282,472	276,216	286,136	289,616
	513,636	396,008	492,192	493,836
Management College 108/12 build	136,104	124,192	123,640	123,492
First General Building 108/12 build	202,176	193,440	211,760	213,728
Administrative Building 108/12 build	83,592	84,972	80,804	81,356
Student Dormitories / Staff Housing / Motorcycle Parking Lot 109/01 build	440,592	469,752	476,436	480,324
Sports & Leisure Building 111/06 build	Yet to calculate			491,600

Note:

1. FIT: Feed-in Tariff, REC: Renewable Energy Certificate

2. Estimated annual electricity generation = installation capacity 1kw × 365 days × 24 hours × average annual capacity factor; the average annual capacity factor for photovoltaic power in Kaohsiung City is taken as 13.56%.

3. Before 2020, the power generation of the College of Law and the Administration Building (REC) was read from the smart meter network by the Certification Center, and the University has no relevant records. However, after 2021, because the Center did not support the online reading system, the University switched to using photographic reading to send back the electricity. In addition, the solar panels of the College of Law are relatively old, and some of them are damaged, so the electricity generation is not as good as it should be.

▲ Statistics on Solar Photovoltaic Power Generation Equipment

5.2.3 Effectiveness of Energy Saving Measures

Energy Saving Measures

The major strategies and actions of electricity conservation measures are listed in the table below:

Action plan	Description
Energy-saving control and management	
Central electricity monitoring system	Network function of digital electricity gauge was used to conduct on-line monitoring and controls on the electricity usage of each buildings.
Implement self-management on spaces	Self-management system on electricity bills will be implemented for each buildings in order to conduct "users pay" policies and save energy.
Installation of electricity gauge in independent units and outdoor court	Independent electricity gauge will be set up to monitor the electricity usage of independent units and outdoor courts for the affiliated units to conduct electricity calculations and controls.
Adjustment on the starting and stopping time of air conditioning	Implement the rules that air conditioning will not be supplied for administration building and general classroom during winter season (from December to March next year).
Adjustment on opening hours of the library and information center	Different opening hours will be established for each space regarding its function and usage frequency. Those spaces will not be opened during Weekends of Winter and Summer Vacations.
Participate in the demand-based price competition measures of taiwan power company	Participate in the demand-based price competition measures of Taiwan Power Company to save energy and electricity bills
Replace old electricity consumption equipment with new ones	
Implementation of intelligent classroom step-by-step	For the project, we applied network cloud technology and used low carbon and energy-saving as our focus to implement intelligent air conditioning schedule management in teaching spaces such as general classrooms and seminar rooms at the 6 teaching buildings of the school. Users may send in real time through course arrangement system and space borrowing system, organize air condition monitoring and database management and implement comprehensive fully automatic air conditioning schedule control, temperature monitoring and the on off procedure control to enhance the correctness and liability in the management of air conditioning for classrooms, reaching the objectives of facilitating sustainable development of environment and enhancing the quality of learning environment.
Replacing old Air conditioning system with new ones	Budgets were prepared to replace the old air conditioning system with frequency-conversion air conditioner system. Replacements have been completed in College of Science and College of Engineering.
Replacing lightings with LEDs	Budgets were prepared to replace old light bulbs with LEDs. Replacements have been completed in campus circulating roads, streetlights at the parking lots and the classrooms of each buildings and seminar rooms.
Utilization of renewable energy	
Replacing old air conditioning system with new ones	Student dorms adopts solar power hot water system 100% to provide hot water.
Replacing lightings with LEDs	1. Administration building and College of Law installed solar power panels for electricity generation themselves. The total electricity generated was 36.4 kwp. In addition, they have applied for 15 renewable energy certificates. 2. To cooperate with the "million sun rood" plan, we have installed standard solar power generator system on the roof of all the school buildings. In total, 1,217.76 kwp was installed.

▲ List of Power Conservation Strategies and Action Plans

▼ **Electricity Consumption Statistics**

Year	Total/kw	Total/GJ	Year over 2015	EUI
2015	14,201,510	51,084.57	-	58.8
2016	14,528,086	52,259.30	-2.27%	37.1
2017	14,090,386	50,684.84	0.81%	36
2018	12,884,463	46,346.99	9.27%	33
2019	12,970,796	46,694.89	8.67%	33.2
2020	12,733,420	45,840.31	10.28%	32.6
2021	11,292,628	40,620.97	20.43%	28.9
2022	11,959,686	43,020.46	15.79%	30.6

EUI =Total electricity used (kWh)/NUK Total floor area
2015 was selected as the base year for the implementation of the Central Four-Saving Plan.

Fuel Saving Measures

1. Regular maintenance and inspection of the school's official vehicles are carried out to be efficient and fuel-saving.
2. Replacement of aged official vehicles, with priority given to the purchase of which has high efficiency and low fuel consumption.

▼ **Statistics on Fuel Consumption**

Year	Gasoline/L	Diesel/L	Ttl Fuel Consumption/L	Fuel saving (%)
2015	3,672.00		3,672.00	-
2016	1,612.66	1,955.90	3,568.56	2.82%
2017	6,236.45	4,373.36	10,609.81	-188.94%
2018	5,489.40	1,326.30	6,815.70	-85.61%
2019	5,227.26	880.41	6,107.67	-66.33%
2020	4,774.51	1,424.93	6,199.44	-68.83%
2021	5,690.06	847.16	6,537.22	-78.03%
2022	4,492.70	432.82	4,925.52	34.14%

2015 is calculated for the base period; no separate statistics for gasoline and diesel in 2015.

5.2.4 Disaster Emergency Response on Campus

The school crisis management is divided into three parts: crisis prevention, crisis management and recovery. Financial risks are minimized through prudent budgeting, proper allocation, and implementation of early warning.

Crisis prevention

1. Define the key points of the emergency response operation and the handling process: In accordance with the Ministry of Education's crisis handling regulations, "Key Points of the Campus Disaster Emergency Response Operation" and the "Campus Emergency Response Flow Chart" to determine the procedure and responsibility; and the Emergency Response Team is set up, with the Vice-President of Administration acting as the convenor, to convene the relevant units to form the team in the event of a major crisis on campus.

2. Establish a spokesperson system: The Vice President of Academic Affairs will serve as the spokesperson for the University. A press release or statement will be drafted by the Secretariat, compiling information from each unit, and then approved according to the procedures, and then the spokesperson will make a unified statement.

3. Establish a notification system and an emergency network: The University has set up "Emergency Contact Center" in the campus police station, and a 24-hour emergency contact number on the homepage of the University's official website is available 24 hours a day to receive emergencies and report them to the University Security Center in a sequential manner.

4. Educational training, awareness-raising, and drills: Through various assemblies and electronic media, all faculty, staff and students of the university are educated, and crisis simulation drills are organized regularly to enhance the crisis awareness and crisis management of the entire university.

5. Improve campus environment and equipment: Regular inspections and repairs of campus space, facilities, and equipment are conducted; in addition, current technology is supplemented with the construction of a campus safety net to strengthen safety facilities to prevent accidents.

6. Establish a self-audit mechanism and divide the work according to authority and responsibility: coordinate with the Ministry of Education's Campus Safety Audit Checklist and organize coordination and division of labor meetings, according to the authority and responsibility of each office, to ensure the management of campus risks in order to avoid crises.

7. Prudent preparation of the annual budget and proper allocation of school funds: In accordance with Article 30 of the "Regulations on the Management and Supervision of the National University Fund," the annual budget is prepared prudently and the budget allocation meeting is held to allocate funds to each business, so as to minimize the financial risk of possible financial shortfalls in the final accounts.

Crisis Management

According to the eight categories of campus safety notification, the school will use the "Campus Disaster Emergency Response Practice Points" to minimize the damage and eliminate the crisis. In addition, in the event of a financial crisis, the Controller's Office will activate cost-saving measures to minimize the financial crisis.

Post-incident recovery

When the crisis is over, normal operation is resumed to learn, review and improve from it.

1. Accelerate the recovery work: After the crisis is handled, restore all aspects of the school's work promptly so that it can operate properly.

2. Follow-up counseling: The school will continue to provide care and counseling to those affected by the crisis to ensure that members of the school community receive assistance from the school to maintain a safe and healthy life.

3. Revision and review plan: Review and revise the crisis response plan to make up for deficiencies in staffing, support systems, and public communication during the crisis, so that the future response will be more comprehensive.

Effectiveness of Crisis Management in the School

1. Crisis Prevention
   A. Continuously organize various educational training and awareness-raising activities: organize awareness-raising on crisis management through assemblies, such as class advisor camps, and promote awareness during Freshman Week. In addition, the school also publicize crisis management issues to staff through electronic media, such as the monthly personnel service newsletter. In addition, regular crisis drills are organized, including Disaster Prevention Drill on the 921 National Disaster Prevention Day and the annual dormitory Earthquake Drill, in order to enhance crisis awareness and resilience.

▼ Annual Earthquake and Disaster Prevention Drills

Category	Place	Time	Office in charge
Lab Safety Maintenance Training	Assembly Hall	Fresh Week	Gen. Affairs
Fire drill	Dormitories	After freshmen move in	Students Affair, Gen. Affairs
Archives emergency response drill	Files & Documents Section	Yearly	Gen. Affairs, Library

   B. Mental health promotion for staff and students: Counselors, teachers, and roommates play a key role in depression prevention and treatment, so that their knowledge and understanding of the issues can help fight crises. First aid training is promoted every year, and "CPR+AED First Aid Promotion Activity" and other related injury and illness management courses are also organized.

▼ Mental Health Promotion and Crisis Prevention Activities 2022

Date	Activity	No. Participant
2-6	Visits and reviews on off-campus rental housing safety	98
2-6	Handling off-campus rental disputes	2
2-9	Visits and reviews on additional off-campus rental housing safety; update rental information website	6
2/22-26	Friendly Campus Week; petition for anti-drug & anti-bullying	250
3/14-18	Expo of off-campus rental housing	125
3/18	Visit to Tainan Cultural & Creative Park on "Anti-drug Education Exhibition"	18
5/3	Volunteer staff training seminar for drug and tobacco prevention	25
5/28	Anti-smoking paintball activity	250
9/22-30	Friendly Campus Week; petition for anti-drug, anti-smoking & anti-bullying	320
10/12	Officers meeting incorporates drug and tobacco control, campus traffic safety	120
9/7-8	Lecture on drug abuse prevention and legal education	950
9/21	We Are NUK Fair: Anti-smoking and anti-drug campaign	125
10/19	Volunteer staff training seminar for drug and tobacco prevention	25
10/24	Campaign on prevention of drug abuse, Jia-wei Primary School, Kao-hsiung City	About 33
11-12	Class advisors' visits on off-campus rental housing	797
12/24	Handling off-campus rental disputes	1
3/30	The beginning-of-the-semester dormitory residents' assembly, Spring 2021	62
5/5	Celebrating Mother's Day – making bouquets	25
9/6	Dormitory fire drill	About 1500
10/4	The beginning-of-the-semester dormitory residents' assembly, Fall, 2022	65
10/19	Seminar on fire equipment for dormitory wardens	18
9/7-8	Freshmen Week, promotion for campus safety and legal education	About 1200
9/28	Implementing National Disaster Prevention Day Earthquake Evacuation Covering Drill 2021	25
10-11	Officers meeting incorporates drug and tobacco prevention, campus traffic safety	About 120

B. Improve the Campus Environment and Facilities: The University conducts regular inspections and repairs of the various spaces, facilities and equipment on campus to reduce the risk factor of environmental factors in order to comply with the benchmarking requirements of the facilities and equipment.

2. Crisis management

A. Activate the Emergency Response Team: In response to the Covid Pandemic, the Ministry of Education convened a meeting with university representatives on February 3, 2020 and announced the principles for handling the situation, the University immediately activated the Emergency Response Team, and at the meeting of faculty, staff, and student representatives on February 4, it was resolved that the start of the second semester of the 2019 academic year would be postponed to February 25 in order to minimize the risk of a mass clustering of students and to gain time to get ready to prevent epidemics before the start of the

academic year. In order to quickly communicate the instructions from the Central Epidemic Command Center and the Ministry of Education, the "NUK University Epidemic Prevention Action" LINE group was set up on May 19, 2021, and is still in operation.

B. Emergency response by the relevant units: Based on the principle of immediate grasp and honesty at the initial stage, notification and implementation of control and prevention of expansion are reported in accordance with the law.

▼ Statistics on School Safety Notification Cases

	2019	2020	2021	2022
total no. school safety cases	68	66	48	228
accident	50	31	28	40
security maintenance incident	4	10	10	6
Violence and Deviant Behavior	0	4	0	1
Conflict of discipline	0	1	0	1
Child Juvenile Protection Incident	6	5	1	2
natural disaster	0	0	0	0
occurrence of disease	8	11	7	177
Others	0	4	2	1

2. Post-incident recovery and strengthening of crisis response

After the disaster of August 23, 2018, the Ministry of Education allocated funds to repair the damage. After 2021, the MOE supported the "360-Degree Safety Protection Network Enhancement Network Program for Sustainable Campuses", and was further supported by the 2022 Annual Fundraising Campaign.

▼ Enhanced Campus Safety Maintenance Funding and Utilization Results, 2019-2023

Project	Year	Item	Total Funds	Result
823 Rainstorm Damage Recovery and Repair	107-108	Repair of school buildings and campus facilities	11,281,104	Prioritization of urgent and safety-related projects has been completed.
Books & Equipment	108-112	Improve safety of campus facilities	6,515,845	Improve emergency response, access control, and driveway access control facilities at all buildings.
		Fire safety	2,614,000	Improve smoke detectors, emergency lighting, firefighting piping, broadcast blackout and zone control modules.
		Lab safety	4,313,000	Improve laboratory environmental sanitation system, extraction system, personal protection, centralized double sinks.
360° Safety Protection Network	110	Reinforce safety of campus facilities	11,710,000	Complete the safety facilities in dangerous areas, multi-dimensional distress system, and interface with the police reporting APP

5.2.5 Disaster Prevention and Relief Planning in Cooperation with The Government

Building Disaster-Proof Communities and Promoting Resilient Cities

The project is hosted by Prof. Minghao Wu of the Department of Civil and Environmental Engineering, who dedicates himself to promoting resilient community disaster prevention by utilizing his professionalism and influence. The goal of the project is to support the Kaohsiung City Government in conducting scientific research on disaster prevention and relief, analyzing potential areas for various types of disasters, formulating disaster prevention and relief plans, implementing and integrating resources, counseling the community to prevent disasters on their own, and planning for micro-storage pools. The project is aimed at realizing the "SDG11 Sustainable Cities" and "SDG13 Climate Action" through on-site investigations and integrating various resources in the community. Students are led to participate in disaster prevention and rescue drills and autonomous disaster prevention community observation activities to promote the goal of "SDG4 Education Quality"; and the Kaohsiung City Government's Bureau of Water Resources co-organized educational training and drills on new temporary flood prevention equipment, and students who passed the test obtained the qualification of Ministry of the Interior's Disaster Prevention Officer. It improves the capacity of the community's disaster prevention and rescue organization and helps the community operate as a resilient community

95 | 182 | 155
2020 | 2021 | 2022
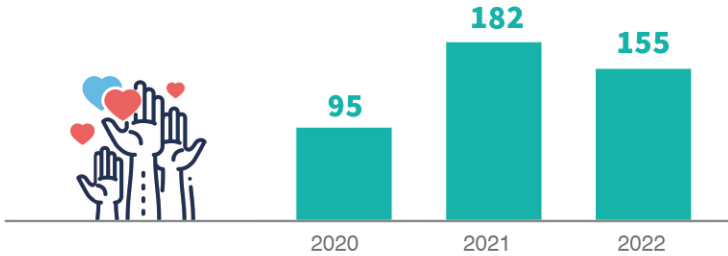
▲ No. Certified Disaster Prevention Officers Completing Training

2020	2021-2022
● In-gang Li, Yong-an Dist.	● A-lian Comm, A-lian Dist.
● Min-quan, Qian-zhen Dist.	● Zhong-qi Li, Qiao-tou Dist.
● Wen-xian Comm, Lin-yuan Dist.	● Long-jing Comm, Gu-shan Dist.
● New Jia-chang Comm, Nan-zi Dist.	● Bi-dong Comm, Zuo-ying Dist.
● Jin-shan Comm, Yan-chao Dist.	

▲ Resilient Communities of Practice

Disaster Awareness Courses

Based on the types of disasters that each community is dealing with, and in conjunction with each type of disaster management, the courses are planned and designed for students and community residents. Through the "Special Theory of Urban Disaster Prevention", "Disaster Prevention Officer Training Course", "Application of GIS in Resilient Cities", "Disaster Prevention Technology", and "Intelligent Disaster Prevention Workshops", students can participate in the course activities; at the community sites, education and training or publicity will be conducted according to the needs of each community's disaster management. There are also teaching and learning of disaster prevention mapping, disaster prevention and rescue drill planning, and the writing of disaster prevention and rescue plans for resilient communities, so that the courses can be localized. The team aims at cultivating disaster prevention personnel and enhancing the professional knowledge of residents in the community on disaster prevention and rescue, and assisting the community in promoting disaster prevention in response to the UN's sustainable development goals such as SDG4 Quality Education, SDG11 Sustainable Cities and Communities, and SDG13 Climate Action, in order to improve the capacity of the community's disaster prevention and rescue organization and assist the community in developing into a resilient community.

5.2.6 Carbon Neutral Commitments and Emission Reduction Programs

▼ igning Net Zero 2050

"As a citizen of the world, everyone has the responsibility to slow down the pace of global climate change and avoid damaging the natural environment." At the opening ceremony of the 2022 Sustainability Week, the President of the University signed the " Net Zero 2050" Declaration, which follows the national policy of actively linking industries and society, and cooperates with the government to promote energy transformation, and simultaneously takes stock of the six major directions of "Green University", "Campus Carbon Neutrality", "Low-Carbon Transportation", "Green Building", "Zero Waste and Low-Carbon Diet", and "Citizen Participation".

In response to global climate action, the Taiwan 2050 Net Zero Carbon Emission Pathway Plan, and the cultivation of globally sustainable human resources, the University has been promoting campus climate action since 2022 from the perspectives of campus environmental organization and regulations, environmental management, energy-saving strategies, and environmental education.

Campus carbon neutrality

The University has integrated UN Sustainable Development Goals into the organization and operation of the school, and has formulated a carbon neutral plan, which aims to utilize the University's professional knowledge and scientific research capabilities to actively reduce the environmental carbon footprint of the campus, and to gradually achieve carbon neutrality of the campus. Specific practices are described below:

1. Action Plan 3-1-1: Campus Carbon Inventory

A. Description of Current Status: At the opening ceremony of the Sustainable Development Week on May 23, 2022, the President of the University announced and signed the "2050 Net Zero Carbon Emissions" declaration, which aims to achieve carbon neutrality and move towards the goal of net zero emissions by 2050 gradually.

B. Implementation Strategies and Practices: In order to understand the carbon emissions of the school, a carbon inventory is expected to be conducted from 2023 to 2026 to calculate the greenhouse gases emitted directly or indirectly by the school in all aspects of administration, teaching, research, and student learning, so as to further develop appropriate measures to reduce the emissions of the school.

   a. Carbon inventory will be conducted annually and the results of the inventory will be made public.
   - Annual carbon inventory conducted by a professional consultant.
   - Carbon check certified by a third-party impartial organization.

   b. Setting up emission reduction measures based on the results of inventory and verification to gradually move towards carbon neutrality (SDG 7, SDG 13).
   - Develop and review a campus-wide reduction plan based on the results of the current year's inventory.

C. Expected results: To understand the carbon emission situation of the whole university, and to reduce carbon emissions year by year, with the mid-range goal of moving towards carbon neutrality, in order to achieve the goal of "Net Zero Carbon Emission 2050".

2. Action Plan 3-1-2: Campus Climate Action

A. Description of Current Status:

   a. Global climate change is an essential issue for mankind, and we are a member of the Green University and one of the participants in global environmental protection. In 2019-2020, the University received funding from the Architectural Research Institute of the Ministry of the Interior and the Kaohsiung City Government to renovate the student dormitories into smart-energy residences, and to install a smart-energy management system and a centralized power monitoring system. For electricity usage, digital meters are installed in each building on campus to collect data on electricity usage in each building, and a "Power-BI" webpage has been built to provide students and faculty with information on electricity usage and remind them to conserve energy in order to fulfill their responsibilities as citizens of the earth.

   b. In addition to the improvement of hardware and equipment, the environmental regulations and management of the University should also be included in climate issues. In response to the SDGs: 6, 13, 15 and UI Green Metric World University

Rankings, the University intends to take stock of the current status of environmental and climate-related issues and regulations from 2023-2026, and to examine the potential risks in management in order to take measures to effectively reduce and eliminate them.

B. Implementation Strategies and Practices

   a. The University's Sustainable Climate Change Program participates annually in UI Green Metric World University Rankings - Energy Climate Change, Education and Research (SDG 13).
   - Revise the Chinese and English sustainability reports annually and participate in the evaluation.
   - Participate in UI Green Metric World University Rankings annually to review annual implementation.
   - Inventory campus carbon emissions and develop medium- and long-term options for reducing emissions.
   - Annually review the appropriateness of the school's administrative rules and regulations.

   b. Enhance smart power and introduce water management system to participate in UI Green Metric World University Rankings - Water Resources (SDG 6, SDG 15).
   - Utilize smart power system monitoring to reduce electricity waste year after year.
   - Water saving equipment installations and water management.
   - Sewage recycling.

C. Expected results: To review the school's internal regulations, and strengthen the smart power management and water management system, the University will propose a specific climate change response plan to meet the requirements of the university social responsibility.

Carbon emission

Using 2015 as the base year, the school estimates its own GHG emissions every year to get a complete picture of the current situation of GHG emissions. In 2019, total carbon emissions was reduced by a total of 4.19% compared with 2015, mainly due to the implementation of energy-saving measures such as the replacement of old air-conditioners and the use of energy-saving light bulbs.

▼ Carbon Emission Statistics by Year

Year	Carbon Emissions (MT CO2e)	Savings over 2015(%)	Carbon emissions per capita (MT CO2e/capita)
2015	7,400.63	-	1.41
2016	7,617.74	-2.93%	1.23
2017	7,438.98	-0.52%	1.17
2018	6,754.27	8.73%	1.06
2019	7,090.45	4.19%	1.10
2020	6,786.91	8.29%	1.07
2021	5,732.90	22.54%	0.85
2022	6,041.62	18.36%	0.89

5.3 Sustainable Supply Chain

5.3.1 Green Procurement and Priority Purchasing

In accordance with the "Measures for Priority Procurement of Environmentally Friendly Products by Organizations" and the "Measures for Evaluating the Performance of Green Procurement by Organizations", the achievement rate of green procurement has reached more than 99%. In addition, the school has implemented priority procurement according to the "Regulations on Priority Procurement of Goods and Services Produced by Welfare Institutions for the Physically and Mentally Handicapped or Sheltered Workshops".

The University makes ethical purchases in accordance with the Executive Yuan's procurement policy. In 2021, it achieved 5.31% of preferred procurement, which is better than the 5% stipulated in the regulations of the previous year.

1. Green Procurement Policy :

A. In accordance with the "Measures for Priority Procurement of Environmentally Protective Products by Institutions" and the "2020 Green Procurement Performance Assessment Scoring Method for Institutions" formulated by the Environmental Protection Administration (EPA) in 2001, the school will carry out environmentally friendly green procurement matters.

B. In 2022, green procurement implementation rate: 99.44 %. The annual green procurement amount is $13.45614.

2. Priority Purchasing Policy :

A. In accordance with Article 69 of the "Law for the Protection of the Rights and Interests of Persons with Mental and Physical Disabilities" and the "Measures for Priority Procurement of Goods and Services Produced by Welfare Institutions for Persons with Mental and Physical Disabilities or Sheltered Workshops", the school will carry out the priority procurement matters.

B. The total amount of priority procurement in 2021 is NT$761,325, with an achievement rate of 5.99%, which is in compliance with the 5% requirement stipulated in Article 3 of "Measures for Priority Procurement of Goods and Services Produced by Organizations of Welfare Institutions for the Physically and Mentally Handicapped or Sheltered Workshops".

5.3.2 Catering Hygiene Management Mechanism

Promote low-carbon eating and reduce waste on campus: The convenience store on campus has set up a friendly mechanism - "30% off 7 hours before the expiration date", which reduces food waste and carbon emissions, and attracts teachers and students to shop there.

1. **Food safety for students :** In order to provide teachers and students with good food quality and food safety, the school has hired a part-time dietitian, who, together with the nurse of the health protection section of Student Affairs Office and colleagues from the Environmental Safety and Sanitation Section of General Affairs Office, and representatives of the Student Association, will regularly implement various food and beverage sanitation tests, organize educational training for kitchen staff every semester, and, in accordance with the regulations of the Ministry of Health and Welfare, and the Ministry of Education, will provide counseling to vendors on the management of the place of origin and the registration of the food ingredients. This will help control the source of food materials on campus and quickly remove problematic foods from the shelves. In addition, the General Affairs Office has set up the "Contracted Vendor Performance Evaluation Meeting", which is held every year.

2. **Health food options :** The school puts up large colorful posters such as "Diet Yellow-Red-Green Lights" in the kitchens of the student dormitories, the stairway to the cafeteria and dining hall on the first floor of the General Building, to teach staff and students about healthy dietary choices and to promote healthy food. It organizes weight control classes, and designs videos and activities to promote healthy diet.

During the semester, the school organizes food and hygiene education training, and adds relevant contents to encourage manufacturers to produce healthy food for teachers and students. In addition, the "My Plate. Eat Smart. Nutrition Will Follow" placemat is designed and distributed to teachers and students during the program as a reference for healthy food choices.

◀ **Food Color Chart poster**

▲ **Placemat: My plate. Eat Smart**

5.4 Civic Engagement on Sustainable Environmental Education

5.4.1 Ecosystem Support Strategies

▼

Cultivate the ecological awareness of faculty, staff and students

1. **Faculty and staff training :** Through the environmental education and training programs such as "National Parks Wild View Film Festival – Living on Our Planet", "Going to the South Pole" and "Carbon Emissions Trading System", the school aims to enhance the colleagues' understanding of the environment and to maintain a balanced environment and ecology in order to achieve sustainable development.

2. **Foster students' environmental awareness :** Through the Environmental Education in General Education, the school conveys the basic concepts of nature conservation, the impact of global warming on natural resources, an overview of Taiwan's natural resources, the current state of conservation, and related laws and regulations.

3. **Create Environmentally Diverse Habitats :** Although the University does not have protected or restored habitats, it is committed to creating a sustainable ecological environment. 51.6% of the campus is covered by greenery, with 142 tree species, and the eco-pond, a man-made wetland, has been the most important campus attraction since the founding of the University.

The University has recorded a total of 68 species of birds in 36 families over the years. In recent years, 59 species in 30 families are regularly sighted, including the rare second-class protected species, crested goshawk, black-winged kite, yellow oriole, and the third-class protected species red-tailed shrike. Since 2021, NUK and Kaohsiung Wild Bird Society have been monitoring the conservation of orioles and conducting monthly surveys.

▼ **Number of butterfly and tree species**

|	2020	2021	2022
Butterfly	44	51	46
Tree	138	142	143
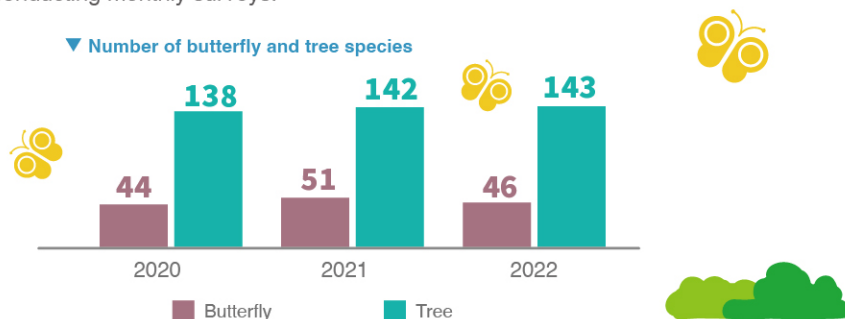
Build animal-friendly campus

Since August 1, 2015, the Campus Environmental Safety and Health Center has cooperated with the Student Pet Research Society to solve the problem of stray dogs on campus. The faculty and students seek help and guidance from different animal protection groups, such as Dogs Lover and Heart of Taiwan Animal Care to treat the stray dogs more friendly and humanely. When the dogs become tame and controllable, they are given sterilization and vaccines and then are listed for control and regularly receive heartworm medicine, rabies vaccine and other medical attention. The University has also adopted the strategy to use the tamed campus dogs to keep the new stray ones out. In addition, a kennel was set up to care for the injured and sick dogs waiting for adoption. A website is constructed to report about the dogs and educate the faculty, staff and students, and announce adoption information in order to create a canine-friendly campus.

▼ **No. Rescued dogs on campus**

	2020	2021	2022
Stray caught	15	3	3
Altered	9	3	2
Adoption meeting	1	2	1
adoption	9	2	5
Rabies vaxxed	18	19	17
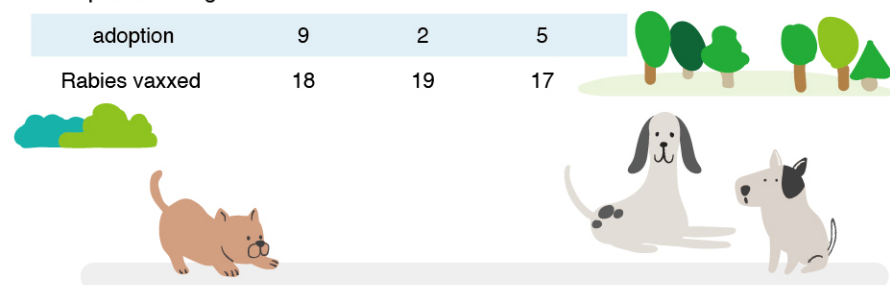
Promote Farming in Schools to Reduce Food Carbon Footprints

Recently, the awareness of food safety has been on the rise, and in view of the growing popularity of the concept of homesteading, in order to satisfy the needs of teachers and students for teaching or experimental farming on campus, the school has provided space on campus for teachers and students, or dependents of faculty and staff to achieve the functions of teaching, food and farming, and recreation, and has made available 10 units of internships in the open space opposite the 2nd Student Dormitory (the old nursery area), with the area of each unit averaging 26 square meters. Each unit has an average area of 26 square meters and can be used for a period of 4 months. 177 people have participated in the program so far.

5.4.2 Ecological Volunteer and Community Partnership Program

▼

Train Community Volunteers for Ecological Conservation

Since 2014, the University has formed an eco-guard volunteer team with teachers, students and residents from the surrounding communities to carry out ecological monitoring, explanation, butterfly restoration and other work projects. By opening up opportunities for environmental creation in the school campus, it has allowed the community's senior citizens to find a new stage in their capacity as volunteers, and has also organized professional training courses and environmental education enrichment courses to enhance the participants' knowledge of environmental education; it has also designed environmental education courses for primary and secondary schools that can be carried out on their campus. The volunteers also help to lead eco-tours, so as to pass down the experience. The service-learning students have participated in the construction of environmental education sites, and carried out habitat maintenance for the butterfly trail, so as to advance the butterfly trail l from 250 meters to 300 meters. It is hoped that through the creation of venues and the promotion of teaching, young people and the elderly will have the opportunity to participate in and serve as seed soldiers for environmental education, or even as an extension of the environmental education program in the national education system, in order to achieve the goal of "SDG3 Good Health and Social Welfare," which is to promote the health and well-being of all ages, and to implement the goal of "SDG4 Quality Education" to provide high-quality environmental education content in primary and secondary schools.

▼ Eco-Environmental Conservation Education Achievement

	2019	2020	2021	2022
Butterfly trail length (m)	200	260	280	300
No. tree planted	35	426	62	69
No. Campus eco volunteer	57	63	68	90
No. Volunteer training session	2	2	2	2
Experiential envir. ed class for primary and secondary schools	6	7	6	6
No. Participant	183	205	177	200
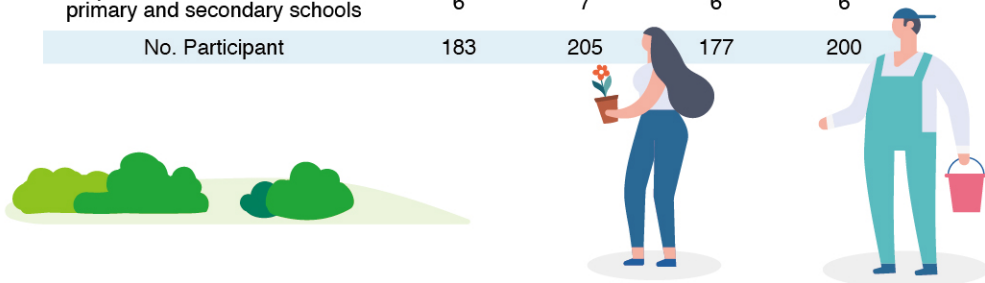
Combine resources from different sectors to organize sustainable activities

Since the University signed the "Talloires Declaration" in 2004, it has organized a series of "Sustainable Week" activities every year. It has become a tradition to promote sustainable education. Through different topics and activities, faculty, students, community members, and teachers and students in primary and secondary schools can obtain comprehensive environmental information and establish environmental ethics. In the early days, the University held action dramas, road running competitions, several second-hand book and article sales, energy-saving workshops, and film appreciations to enhance the environmental awareness, and to conduct laboratory or fire drills. Electric vehicles were also displayed to encourage the use of green energy. Faculty and students can acquire the integrated knowledge of sustainable development and environmental protection in all aspects. Since 2021, complying with the national policy, the school has used the rich ecological resources on campus to conduct various environmental education. In 2021, signing a working partnership with Kaohsiung City Wild Bird Society, the school began to conserve orioles. Through the workshops and a series of activities in Sustainability Week, the faculty, students and the general public not only gained a better understanding of avian conservations but participated in monitoring and guarding the birds' nests. In recent years, the school has continued to promote the theme and number of participants of the Environmental Sustainability Week.

▼ Activities of Sustainability Week in Recent Years

	Activity	No. Participant
2020	**On-line activities** "Review of the past Annual Sustainability Weeks", "Trees, Tall Trees on Campus" & "History of Our Campus"	328

2021	1. Sign Oriole Conservation Partnership in March
	    Co-hold "Oriole Environmental Education Series" (50 participants)
	 2. Hold Sustainability Week environmental education series in October
	   ● "Special exhibition of oriole ecology and conservation in NUK" (approx 100 participants)
	   ● Online lecture, "The Difficulties and Opportunities of Bird Conservation" (173 participants)
	   ● "NUK Oriole Environmental Education Volunteer training workshop" (31 participants)
		354

2022	Sustainability Week opened on May 23 with the President leading the administrators in declaring the university's 2050 Net Zero Carbon Emissions, which includes commitments to a green university, campus carbon neutrality, low-carbon transportation, green buildings, zero-waste, low-carbon diet, and civic participation. The "Art and Plants for You" Art and Ecology Exhibition, which will be on display from May 23 to May 27, includes a macro photo exhibition of plants taken by ecology volunteers and an exhibition of botanical transfer dyeing and printing works by artist Song Meirong.	200

ESG × SDGs

National University of Kaohsiung

6.1 Social Prosperity Strategies and Goals

Through the first phase of the Higher Education Sprout Project, resources were injected, and the project team was guided to connect with local issues and integrate with school curriculums, teaching, and cultivation of characteristic talents, in order to practice and further in the field through the three directions of local links, national education links, and international links.

Local Links

Space revitalization & cultural assets preservation

Disaster prevention community and resilient city

Cross generation mutual aid for sustainable homes

Ecological conservation education

公共性 — 8 DECENT WORK AND ECONOMIC GROWTH

創新教學 — 4 QUALITY EDUCATION

社會責任 — 11 SUSTAINABLE CITIES AND COMMUNITIES

國際教育 — 17 PARTNERSHIPS FOR THE GOALS

International Links

Sister schools

National Ed Links

Specialized Class for Petrochemical Industry

Sci-Tech transforms education in remote areas

Local Education Action Alliance

Sign dual degree programs

Recruit internal exchange students

Social Inclusion and Regional Revitalization

Local Links

1. Spatial Revitalization and Cultural Asset Preservation: To lead students to propose preservation strategies and ideas corresponding to the culture, environment, resources, and knowhow of the site through observation and understanding of the current state of the site, so as to implement the sustainable development of the cultural and geographic assets. 10 USR Community Development Workshops were held in 2022, with a total of 141 participants.

2. Disaster Prevention and Resilient City: Students are led to participate in disaster prevention and rescue drills and autonomous disaster prevention community observation activities. Kaohsiung City Government's Bureau of Water Resources co-organized educational training and drills on new temporary flood prevention equipment, and students who passed the test obtained the qualification of Ministry of the Interior's Disaster Prevention Officer. It improves the capacity of the community's disaster prevention and rescue organization and helps the community operate as a resilient community. In 2022, a total of 155 Disaster Prevention Soldiers were trained.

3. Eco-environmental Conservation Education: The "Service Learning" curriculum is offered to allow students and volunteers to participate in maintaining the Butterfly Trail and recognizing the environmental resources of the campus, and linking with surrounding primary and secondary schools to jointly organize environmental education experiential courses on the campus of a high school to popularize and promote environmental education. In 2022, a total of 6 such courses were held, and the cumulative length of the Butterfly Trail on the school campus was lengthened to 300 meters.

4. Cross Generation Mutual Aids for Sustainable Home: Students were led to visit practical sites and set up the NUK Community Service Team to root in the community, plan diversified training courses, and carry out social issue services such as care for the elders, employment for the disadvantaged, cultural and creative design, and educational counseling, in order to enhance the relationship between the University and the cooperating sites. In 2022, two AR2VR videos in support of Yuan-zhong Port were produced, and a foldable booklet on the community and a board game were created. The results for 2020-2022 are as follows.

Result	
2020	**Produced 17 books of genealogy :** Organized "Research Activity on the Traceability of Ancient Altered Hall Names in Yuan-zhong Port", tracing the establishment of the "Eight Major Surnames" in Yuan-zhong Port.
2021	**Completed 5 community murals :** Collaborated with Yuan-zhong Port Community Development Association in organizing "Community Painting Activity", selecting outstanding works of art that incorporate local humanities, landscapes, and properties, and having them painted into murals by the NUK students.
2022	**Produced 3 AR2VR videos :** Produced AR2VR videos on "Introduction of Yuan-zhong Port Community" and "Introduction of Wetland Yuan-zhong Port" using AVR technology. **Assisted in the production of Yuan-zhong Port Folder" :** Provided Yuan-zhong Port Community Development Association to promote local culture. **Produced a board game "Battle for Yuan-zhong" :** Designed and produced a board game based on the results of years of fieldwork and research, incorporating the rich local knowledge of humanities, landscapes and properties into an interesting real estate game, making it both educational and entertaining.

National Education Links

1. Establish a local education action alliance to help promote multiple electives at the national education end: Based on the high school quality program and nature experimental classes promoted in 2014, the school has established educational partnerships with neighboring high schools to offer hands-on science courses. At the same time, in response to the changes in the 108 Curriculum, the school has formed a teaching alliance with high schools and universities in Kaohsiung area since 2020 in offering diversified elective courses with special characteristics, thus solving the problem of insufficient elective courses in high schools.

   A. **Flexible Learning Consortium :** The Flexible Learning Consortium was formed with 5 senior high schools and 4 universities to offer 15 senior high school flexible learning courses in response to the 108 Curriculum, with university professors as lecturers for cross-campus elective courses covering introductory law, economics, finance and economics, and genetic engineering, among others.

   B. **Semiconductor Digital Industry Prerequisite Program :** Promote the Programwith 7 vocational high schools in Zuonan District, Kaohsiung, combining professors specializing in the semiconductor and digital industry with local characteristics to develop courses on the fundamentals of Kaohsiung's digital and semiconductor industries, so as to provide high school students with an initial understanding of the principles, structure, and production of semiconductors, and to further cultivate local semiconductor talent.

   C. **Petrochemical Industry College Program :** Combining the industry-academia cooperation mechanism established with 13 manufacturers in Renwu Industrial Park and integrating the relevant faculty and equipment on campus, the program offers courses related to the petrochemical industry.

   D. **Diversified "Inquiry and Practice" Courses :** In response to the 108 curriculum of Senior High School, the University promotes "Inquiry and Practice" courses in natural sciences, trains our students to serve as seed teachers for science competition training camps and teacher training, and guide senior high school students and teachers in the National Teachers' Training Center to conduct fieldwork, as well as provide training in activity planning, 3D modeling, pin soldering of digital microcomputer boards, and Arduino UNOs to train students to use professional software.

2. Flip education in remote areas with technology, and popularize of science education in local countries.

   A. **Subsidize teachers and students to organize science education camps, and counsel non-urban high schools to develop flexible programs :** Encourage teachers and students to organize theme camps on their own, with 45 camps held in 2019-2022, covering basketball, culture, summer science fair training, chess, English, and elementary school bilingual class, and also organizing camps for children of new residents to learn Vietnamese, Indonesian, and chemistry experiments. (Attachment 4-3).

B. "Turn on the Lights" to implement social services by keeping national school students engaged : Since 2015, the University has been investing in "Digital Student Companion Program" to recruit and train both undergraduate and graduate students to serve as study partners on campus. Through the Internet and online learning platforms, the program implements tutoring and accompanying elementary school students in remote areas to inspire their motivation and interests in learning, to promote equal opportunities for learning in rural areas. It also fosters the spirit of self-management, social service, character enhancement, and digital care among the NUK students. NUK is the only school in the country that promotes such extension service so that national primary and secondary school students in remote areas can be assisted in bridging the gap of their studies, adapting to life, and enhancing independent learning.

	Participating schools	No. participant	Service hour
2019	**Kaohsiung :** Shan-lin Junior High, Bao-lai Junior High, Jia-xian Junior High, Long-xin Elementary, Liu-gui Elementary	167	4,260
2020	**Kaohsiung :** Shan-lin Junior High, Bao-lai Junior High, Jia-xian Junior High, Nan-long Elementary, Yue-mei Elementary, Gang-pu Elementary	127	3,720
2021	**Kaohsiung :** Bao-lai Junior High, Jia-xian Junior High, Nan-long Elementary, Yue-mei Elementary, Gang-pu Elementary **Tainan :** Qin-shan Elementary, Ji-bei-shua Elmentary	188	4,516
2022	**Kaohsiung :** Jia-xian Junior High, Nan-long Elementary, Yue-mei Elementary, Gang-pu Elementary **Tainan :** Qin-shan Elementary, Ji-bei-shua Elmentary	163	4,010
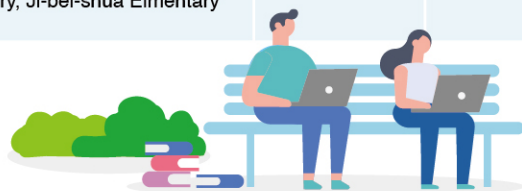
International Links

Currently, there are 350 overseas sister schools, 88% of which are located in Asia, and 7 sister schools have signed joint dual-degree with a total of 12 programs. 272 foreign exchange students were enrolled in 2017-2020, and 243 students went abroad on exchange. In 2020, due to the impact of the COVID-19 pandemic, the number of exchange students and interns, both going abroad and coming from abroad, affected by border control, was greatly reduced. However, through active participation in online enrollment, the number of foreign students in 2021 still increased by 21.74% compared to the previous year.

No. School in exchange : 135

**No. signing contract 350;
Interaction rate 39%**

14 NORTH AMERICA
4 SOUTH AMERICA
22 EUROPE
0 AFRICA
316 ASIA
3 AUSTRALIA

▲ Distribution graph of international partner Universities

6.2 Social Practices within the University

6.2.1 Recruitment and Support Policies for the Underprivileged, Physically Disabled, and Minority Groups

▼

In order to ensure equal educational resources and opportunities, the University provides diversified and flexible admission channels, promotes "Vision Plan" for underprivileged students, and optimizes the learning support system for economically or culturally underprivileged students, so as to realize the spirit of the public nature of higher education; at the same time, in order to help students explore their careers and career enrichment programs, the school sets up an interactive social networking platform to provide educational resources and life support channels, and has completed "Five Special Methods on the Learning Support Mechanism" to support students to learn at ease.

Recruitment and Support Strategies for Equalizing Educational Opportunities

1. Diversified Access to Education and Its Efficacy for Economically or Culturally Underprivileged Students : In line with the MOE's initiative since 2021 to provide opportunities for local and underprivileged students to study at national universities with local characteristics, the school aims to promote social mobility. In 2021, a total of 8 departments applied for the "Vision Plan", and the MOE approved 37 enrollments and 18 admissions; in 2021, the enrollment was increased to 42 students and 29 admissions

▼ Approved enrollment, No. applicants & No. students admitted to each department of Vision Plan 2021

	2021			2022		
	No. enrollment	No. applicant	No. admission	No. enrollment	No. applicant	No. admission
Civil & Envir. Engr	5	2	2	3	4	3
Chemical Engr & Material Engr.	5	1	1	8	4	4
Life Science	5	2	2	3	2	2
Architecture	6	1	1	5	0	0
Info Mgmt	3	3	3	6	10	6
Electrical Engr.	3	3	3	8	16	8
Applied Physics	5	3	3	3	0	0
Info Engr	5	5	3	--	--	--
Finance Mgmt	--	--	--	6	11	6
Total	37	20	18	42	47	29

2. Through the recruitment channels of "Star Plan" and "Application for Admission", the school plans for priority admission for underprivileged students, additional quota for indigenous students and for the Vision group, so as to expand the channels for them and to fulfill the public responsibility of the higher education. In order to smoothen the admission channel for indigenous students, the school has also applied to the MOE for the establishment of a special class for indigenous students in the Department of Civil and Environmental Engineering, which has been enrolled since 2018. In addition, in 2020, the MOE approved the establishment of a special selection admission program, which covers new residents and economically underprivileged students.

3. Admission examination for new resident students: Starting from 2022, the admission examination will be conducted in accordance with the school's "Admission Regulations for New Residents," and the target applicants are those who have applied for naturalization in accordance with the provisions of Article 4, Paragraph 1, Items 1 to 3 of the Nationality Act (spouses from Chinese or Hong Kong or Macao are not applicable).

▼ Enrollment channel of economically or culturally underprivileged students planned enrollment 2019-2022

	2019	2020	2021	2022
No. Application (the underprivileged)	51	49	49	46
No. Application (indigene extra quota)	40	36	36	37
No. Star Plan (indigene extra quota)	24	25	25	26
Civil & Envir. Engr. Special Class for Indigenes	36	36	suspended	suspended
Vision Plan approved quota	--	--	37	42
Special Channel approved quota	--	7	5	8
Subtotal	151	153	152	159
Total	6 1 4			

### Learning Support for Economically Or Culturally Underprivileged Students

1. **Enhancement of academic and career counseling activities :** In order to ensure equal resources and opportunities, the school gives priority to economically or culturally underprivileged students to participate in remedial courses, career counseling activities, national examination counseling classes to further their education; it also provides counseling for them to participate in professional certification courses, and invites instructors from professional associations to teach so as to strengthen their professional functions. The percentage of economically or culturally underprivileged students participating in related activities in 2019-2022 increase yearly, which shows the affirmation and effectiveness of the students.

▼ No. economically or culturally underprivileged students participating in counseling 2019-2022
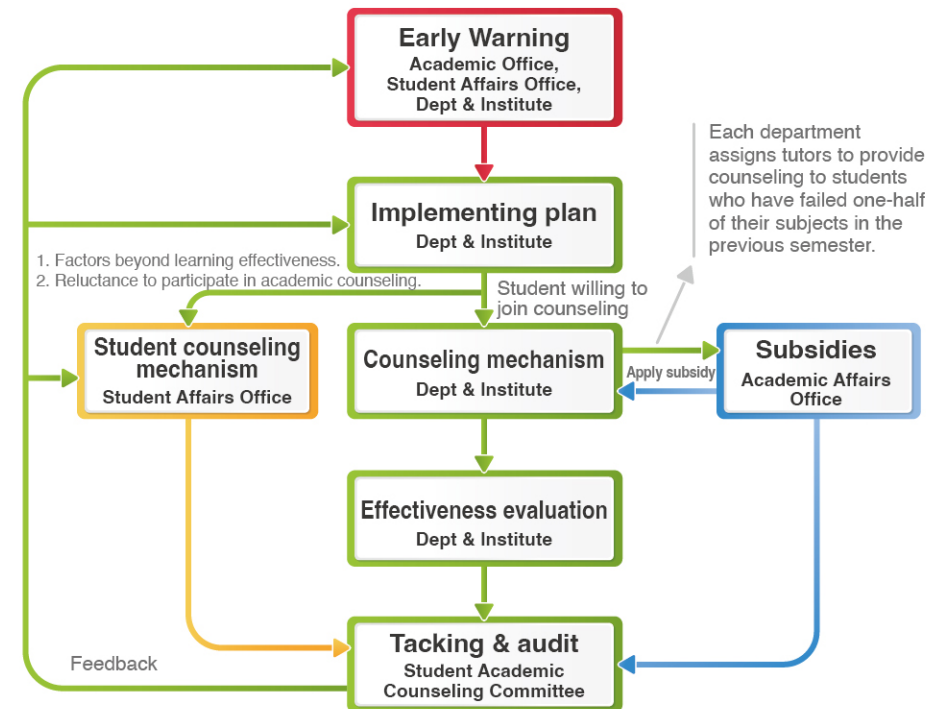
Legend:
- No. economically or culturally underprivileged
- No. students
- No. participants
- Participation ratio (%)
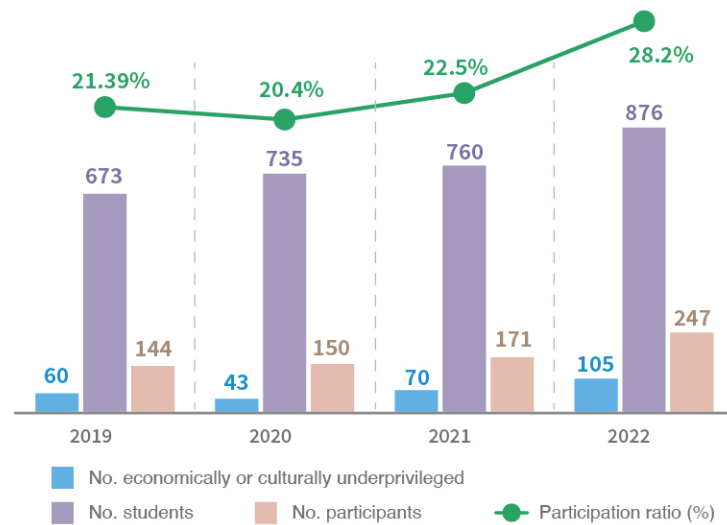
2. Organize Lexue Study Clubs for Economically or Culturally Unprivileged Students: Participation increased from 95 students in 2019 to 102 students in 2022. In 2019-2022, the average percentage of students who participated in academic counseling improved by 49.81%. 110 changed to online Club due to the COVID-19 outbreak, but the number of students remained as high as 154 students.

▼ Learning Effectiveness of Economically or Culturally Disadvantaged Students in Learning Counseling 2019-2022

Legend:
- participants in learning counseling
- non-participant in learning counseling
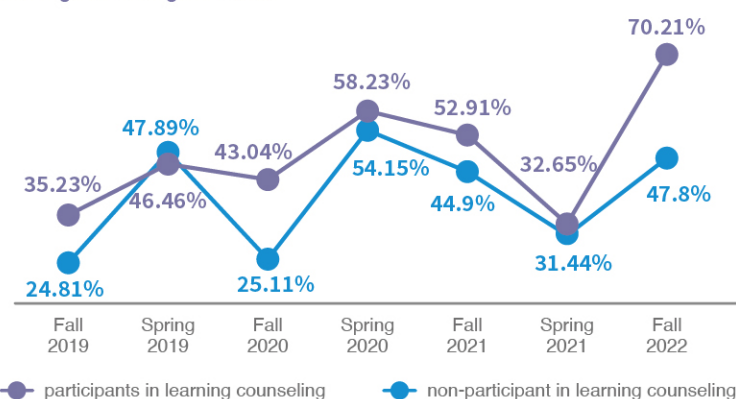
3. Formulate the "Implementation Key Points of Academic Guidance for Students" : The Office of Academic Affairs will assist all departments and institutes in providing academic counseling to students who failed one-half of their subjects in the previous semester and to economically or culturally disadvantaged students who have poor learning outcomes; this will include developing remedial courses by the senior students, tutors counseling, one-on-one teaching and online teaching. Meetings are held at the beginning of each semester and priority is given to those who failed one-half of their subjects in the previous semester and economically or culturally underprivileged students who need academic counseling. In the 2019-2022 (Spring 2022 yet to be recorded), there are a total of 73 teaching assistants with a total of 3,631 counseling visits, and the average number of counseling visits per school year is 90,000, which is the same as the average number of counseling visits per school year. The average number of counseling visits per school year is 908.

▲ Flowchart of Student Academic Counseling

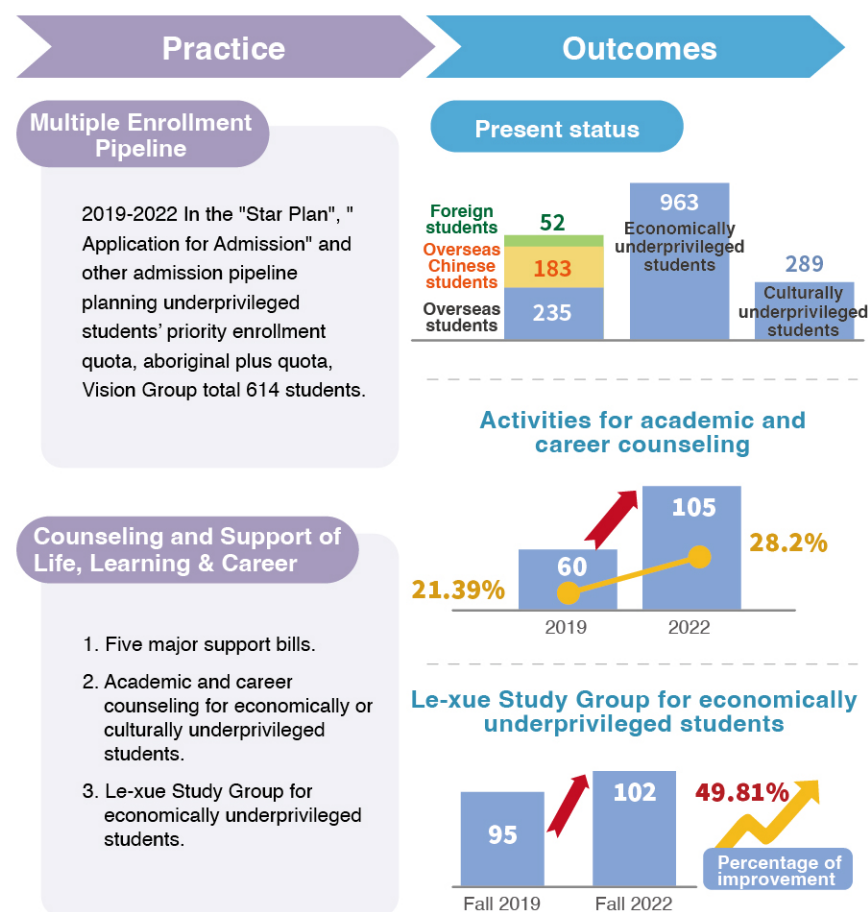## Life Support and Outcomes for Economically or Culturally Underemployed Students

1. Five major support bills: the school has passed five major support bills for economically underprivileged students, including: "Essentials of study grants", "Essentials of off-campus internships", "Essentials of awards for obtaining public offices and licenses", "Essentials of awards for students' participation in activities" and "Essentials of awards for participating in contests", and the school continues to optimize the implementation in order to improve the caring mechanism to the fullest extent. Since its implementation in 2019, the various types of subsidies have amounted to more than $8 million, benefiting more than 600 students.

▼ Number & sum of economically or culturally disadvantaged students supported through the five support bills

	2019	2020	2021	2022
Learning scholarship	79	122	86	70
Internship grant	7	4	0	0
License Incentive	31	35	3	11
Event Incentive	40	40	20	25
Competition Incentive	12	14	3	6
Subtotal (persons)	169	215	112	112
Sum ($'000)	1,700.3	2,665.3	2,182.7	1,562.4

2. Encourage economically underprivileged students to organize recruitment activities through clubs: To formulate "Appendix 1 of the Social Clubs Participating in Sprout Project Scheme: Reference Benchmarks for the Scoring of Subsidy Scrutiny of Senior High School Recruitment Promotion Activities" in order to publicize NUK's diversified professional learning resources, the campus environment, and the learning effectiveness.

3. Academic Counseling for Advanced Professional Courses : The school has strengthened its counseling measures for high risk or economically underprivileged students by focusing on key courses or courses with high demand. For example, the school focuses on allocating hourly fees for tutorials, inviting seniors to serve as tutors, one-on-one teaching, online teaching, and providing regular counseling every semester at regular intervals, so as to reduce the number of failing students and create peer learning for the betterment of the students, thus achieving the effect of mutual benefit in teaching and learning.

4. Focus on career, academic and vocational counseling for economically or culturally underprivileged students :

   A. To provide "Indigenous Language Courses", "TQC Excel Advanced & Professional Courses", and "Planning Staff Development Workshops" for economically underprivileged students in order to assist them in obtaining certificates and enhance their competitiveness in future employment.

B. In addition to financial support and academic counseling for economically or culturally disadvantaged students, the school also provides ethnic language instruction, multicultural experiences, intensive community activities, and long-term engagement by administrators through the Center for Indigenous Students, which provides comprehensive learning resources and life counseling support from different perspectives. The centripetal force and desire for upward mobility demonstrated by the students have been recognized by the External Advisory Committee of the past years.

Practice → Outcomes

Multiple Enrollment Pipeline

2019-2022 In the "Star Plan", " Application for Admission" and other admission pipeline planning underprivileged students' priority enrollment quota, aboriginal plus quota, Vision Group total 614 students.

Counseling and Support of Life, Learning & Career

1. Five major support bills.
2. Academic and career counseling for economically or culturally underprivileged students.
3. Le-xue Study Group for economically underprivileged students.

Present status

Foreign students 52
Overseas Chinese students 183
Overseas students 235
Economically underprivileged students 963
Culturally underprivileged students 289

Activities for academic and career counseling

21.39% — 60 (2019)
28.2% — 105 (2022)

Le-xue Study Group for economically underprivileged students

95 (Fall 2019)
102 (Fall 2022)
49.81% Percentage of improvement

6.2.2 Employment and Support Programs for People with Disabilities

In order to protect the rights and interests of persons with physical and mental disabilities and make full use of them, the University specifies the key points of them in school, and implements full use of persons with disabilities by its responsible units. In 2022, it makes full use of persons with disabilities every month.

▼ **Ratio of employment of persons with physical and mental disabilities**

	2020	2021	2022
No. Civil servant & labor Insurance	850	914	900
Quota for employment	25	27	27
No. employment	26	28.5	27

Calculation based on the number of employees on December 1 of each year

## 6.2.3 Provide comfortable accommodation

In order to improve the quality of student accommodation, the University has applied for the Ministry of Education's subsidies since 2019. The comprehensive dormitory completed the internal improvement of dormitory rooms in 2020, and in May 2022, the Ministry of Education approved the overall improvement plan for upgrading the basic facilities and public space of student dormitories in colleges and universities, and the project is in progress; and the 1st Student Dormitory applied for the MOE partial subsidy to improve the barrier-free campus environment program. The plan is to renovate and improve 6 accessible dormitories in the summer vacation of 2023. After the improvement, not only will the students with physical disabilities be able to live and study in a comfortable environment, but also the student dormitories will become a place for communication, learning, and growth among the students, transforming the dormitory area into a living and learning space.

In order to take care of underprivileged students, as long as low-income, medium-low-income, or special situation students apply for housing, the Dormitory Office will give priority to assisting students with housing. According to the "NUK Student Dormitory Underprivileged Student Aid Service Practice Points", the University will provide free on-campus housing for low-income students as they need to take part in 16 hours of service, which will help to alleviate students' stress and cultivate a sense of responsibility and self-confidence. Since its inception, there have been an average of 60 to 100 participants each year.

6.3 University Social Responsibility

In 2022, through the USR Hub and the school support, the University has developed the four characteristics of a resilient city, local cultural revitalization, sustainable environment, and USRi. Through the adjustment of the teaching mode, the University has reinforced the connection between the faculty-students and the local communities, and promoted the social responsibility of the University through the integration of the community co-learning approach.

▼ Social Practice Topics and SDGs Correlation Chart

SUSTAINABLE DEVELOPMENT GOALS
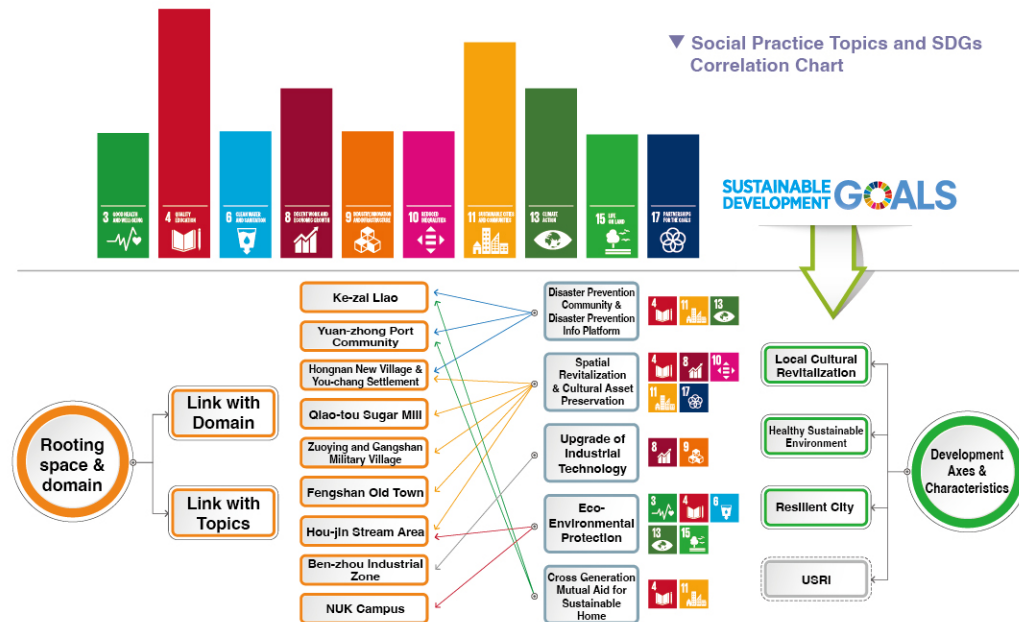
6.3.1 Care and Learning Counseling for the Underprivileged

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Through social practice-oriented teaching and social participatory courses/modules, the University strengthens the connection between faculty-students and the local community, not only assisting the local underprivileged groups in economic self-sufficiency, entrepreneurship, community ecology, and the preservation of literature and history, but also publishing books related to the practice so as to connect the curriculum with the sustainable development of social enterprises, and the concept of the boundless educational field and linking the local issues, thus to transform local energy and develop the community. This will help to realize the spirit of social responsibility of the university.

Connecting with localities through the USR Program, USR Hub Program, and the rural and national educations

1. Implementing the USR Program: Dashu Happy Village New Economical Action Plan:

    Funded by the Ministry of Education's "University Social Responsibility Practice Program", the project is led by a group of teachers. Through participatory planning and design methods, the project takes students to the community to conduct storytelling fieldwork, observe settlement buildings, and research specialty festival and consumer market, in order to understand the important structural elements that shape the local culture. The project is divided into three groups. The "Farm Story Group" uses interviews with different community indicators, such as returning farmers, local senior citizens, and tour guides in the leisure agriculture area, to record the current situation of the industry in Long-mu community. The "Spatial Landscape Group" uses the observation of the building facades along Long-mu Road as the NUK base, and combines the spatial design ideas of Architecture Department to create a mobile office; and the "Brand Taste Group" uses the canvas tool of a business model to introduce the planning and design of the store's revitalization, and to consolidate the possible marketing highlights of Long-m community.

2. Incubate USR Hub teams

Cultural Space Revitalization Platform and Community Co-learning Project

The executive team is based on the Department of Architecture and the Main Axis IV of Sprout Project, with Prof. Qi-zen Chen of the Department of Architecture as the project director. Through the courses of "Low Carbon Building and Wooden Construction", "Cultural Assets and Spatial Reuse", "Community Co-learning and Space Revitalization", and "Geospatial Structures of Terroir", the team is able to link up with various fields and local organizations.

The project is designed to replace the traditional theoretical and static mode of learning with a relocation mode that emphasizes field perspectives and local dialogues. The project focuses on the "Tainan Nanshi Lutaoyang" settlement, and two operational sites, "CPC Kaohsiung Oil Refinery" and "CPC Hongnan Hongyi New Village Cultural Landscape". Through the exploration and analysis of local issues, the project aims to carry out spatial transformation and revitalization of the community, as well as to participate in the "North-South Six Fuel Sites Connection" (an inter-university partnership with Tsinghua University, National Yang Ming Jiaotong University, and Chung Yuan Christian University). Through decentralized observation and field analysis, it discusses the life and development of special settlements and ethnic groups, and conducts thematic analyses of sustainability, disaster prevention, and the preservation of history and humanities in order to realize the goals of "SDG11 Sustainable City" and "SDG4 Education Quality".

Resilient Communities and Sustainable Cities Training Project

Prof. Minghao Wu of the Department of Civil and Environmental Engineering serves as the project director, and is committed to promoting resilient community disaster prevention work. Using disaster vulnerability analysis data or disaster potential maps, the project will complete the environmental diagnostic mapping of potential disasters in the community, discuss disaster prevention and relief strategies to address deficiencies in community disaster prevention, and update the inventory of resilient community organizations and evacuation plans for disaster avoidance.

The curriculum is planned and designed according to the types of disasters that each community has to deal with, and is integrated with the disaster management of each disaster type. Through the "Theory of Urban Disaster Prevention", "Disaster Prevention Officer Training Course", "Application of GIS in Resilient Cities", "Disaster Prevention Technology", and "Smart Disaster Prevention Workshop", students can participate in the course activities. During the counseling period at the community sites, the team will conduct education and training or publicity for the needs of disaster management of each community, teaching and learning of disaster prevention mapping and disaster prevention and rescue drill planning, and writing disaster prevention and rescue plans for resilient communities, so to localize the training to train disaster prevention officers and enhance residents' professionalism on disaster prevention and rescue in the community, thus to respond to respond to the UN SDG4 Quality Education, SDG11 Sustainable Cities and Communities, and SDG13 Climate Action.

### Cross generation mutual aids for sustainable homes

Led by Prof. Ching-Yi Chen and Prof. Jiong-Ching Weng of General Education Center, the team integrates the courses of "Service Learning," "Fieldwork," "Labeling Literature and Temple Culture," and "Social Design and Planning," and jointly implements projects in the communities of Yuan-zhong Port and Ke-zai Liao. The NUK Community Service Team was established by the team teachers to lead the students to interact with the residents in the community and to serve as a base for accumulating and transferring experiences, with the goal of achieving "Sustainable Cities and Communities" in SDG11 and "Quality Education" in SDG4, and to carry out the multi-dimensional cultivation project planning and implementation.

Flip Project of Campus Environmental Education

The project was implemented by Prof. Chen Yo-Jing of for General Education Center, with Environmental Safety and Health Section of General Affairs Department and environmental education promoters as the core members, and combining the "Service Learning" course of General Education Center and the teaching resources of Education Development Center (University for Seniors), using the NUK campus as the field of practice.

It opens opportunities for environmental construction on campus to encourage senior citizens as volunteers; it organizes professional training courses and environmental education enrichment courses to enhance participants' knowledge; it designs courses for primary and secondary schools to be carried out on their campuses to pass on real-life experiences and record keeping; it leads Service-Learning students to participate in the construction of an environmental education site; it maintains the habitat of the butterflies with the trail now expanded from 250 to 300 meters.

Through the creation of venues and the promotion of teaching, young people and the elderly are able to participate in and serve as seed soldiers for environmental education or the environmental education programs at the national education end, and thus to achieve "SDG3 Good Health and Social Welfare" to promote the health and well-being of all ages, and to implement "SDG4 Quality Education" to provide primary and secondary schools with high   ality environmental education.
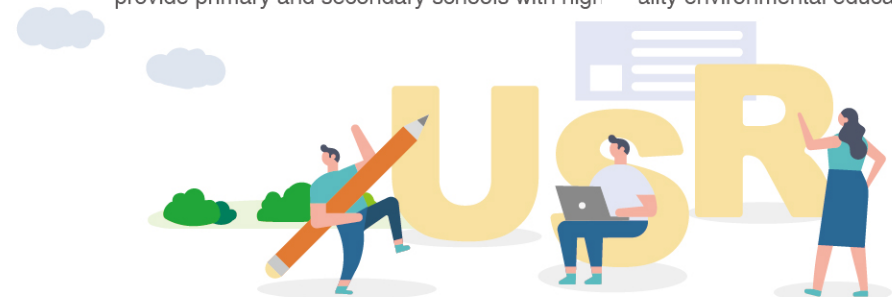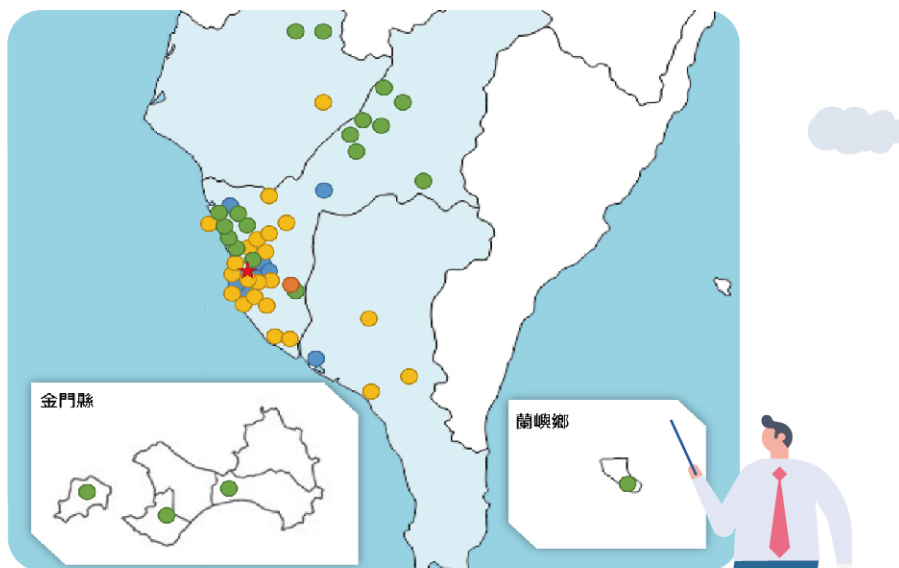
Link with senior high school of national education end

- 12 High school & Vocational schools inc. Ren-wu High School
- Assist high schools to establish diversified characteristic courses

Link with schools in remote areas

- 21 elementary & junior high school, incl. Qing-shan Primary School
- Areas throughout mountains, coast and outlying islands
- Use technology to transform rural education; promote science education
- Training for science exhibitions, English and chemical experiments

1st Phase USR Project

- New Economical Action Plan for Da-shu Happy Village

Links with USR HUB

- **Cross generation mutual aid for sustainable homes:** Ke-zhai Liao Community, Yuan-zhong Port, Hold painting & tour activities to promote identity
- **Transformation project of campus environmental education:** NUK campus as learning domain, Open campus & conduct environmental education and training
- **TEducational programs for building resilient community and sustainable city:** 9 sites incl. New Jia-chang Community, Building resilient community & promote disaster prevention and self-defense capacity
- **Cultural space revitalization platform & community co-learning project:** 8 sites incl. Gang-shan Military Village, Relocate teaching site, explore local sustainable issues & preserve cultural assets
- **Grandpa's & Grandma's Life stories:** 3 sites incl. Nanzih Export Processing Zone, Promote Grandparent-grandchildren co-learning to bridge the generational gap and increase interactions.

金門縣

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Provide participatory courses to meet local needs for in-depth community services

1. Service learning courses:

The USR Hub Project is implemented with the social engagement course "Service Learning", in which teachers lead students to Ke-zai Liao Community and the Yuan-zhong Port community to set up service teams to assist the community in promoting local culture. In the eco-campus, the community elderly are recruited to serve as environmental volunteers, and service learning students work together to create a butterfly trail to develop the characteristics of environmental sustainability education. Students also participate in various social services including elderly care, employment for the underprivileged, cultural and creative design and educational counseling in different organizations such as Kaohsiung Veteran's Home, Kaohsiung Downe's Syndrome Association, ASE Charity Foundation, Nursing Home of Juridical Association of Ya-Lei Charity, Kaohsiung, Syin-lu Social Welfare Foundation, Yuan-zhong Primary School, Aurora Correctional Center, Guo-chang Junior High School, Yo-chang Junior High School, Formosa Charity Group, New Taiwan Volunteer Group, Heng-shan Social Welfare Foundation, Zhong-qi Organic Farm, and National Science and Technology Museum.

▼ No. of hours and participants of Service Learning

No. hours

2019	2020	2021	2022
12	11	9	10

2019	2020	2021	2022
392	366	334	352

No. participant
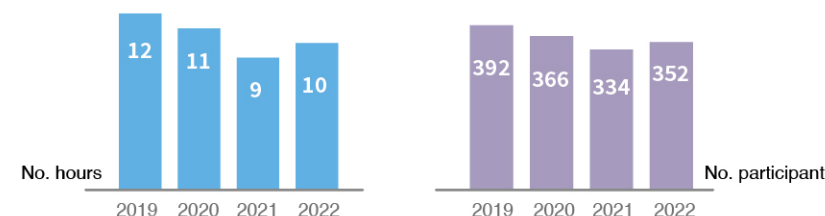
2. Social Practice Courses:

By the funding of Sprout Project, high-performing and promising social practice-type courses are available in the school, e.g., Prof. Yue-ting of Department of Western Languages and Literature executes "Grandpa's and Grandma's Life Narratives I: Disease Narratives, Health Management and Community Building for the Elderly and Young Children", to promote intergenerational education for grandparents and grandchildren, the university's faculty and student team act as a bridge to cross the gap between the elderly, young people, and young children, and through cross-disciplinary health management programs, to enhance intergenerational interactions, eliminate differences, and improve the quality of education and life. In 2022, seven intergenerational learning activities were held, two lectures were given in the Senior Citizen Social Care Lecture Series, one micro-credit course, "Ageing Wisdom: Training Workshops and Field Practices," two narrative and writing skills training sessions on senior citizen issues, and a grandparents' book, "The Mobile Phone Journey from Scratch" was published, which links the school to the community's senior citizens.

6.3.2 Sustainable Student Organizations

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1. Encourage student organizations to promote sustainable social service activities.

   List of student organizations related to sustainability is as follows. For more details, see: https://stu.nuk.edu.tw/act/Queryorganize.asp

Badminton Club

1. Organize competitions such as the Interdepartmental Cup (a school-wide badminton tournament) so that students who co-organize the event can develop the relevant skills needed in the future. - **4.4**
2. Badminton training program provides students with a safe, nonviolent, and effective learning environment .- **4.a**

Tennis Club

1. Arrange semester course programs by the Tennis Club to ensure that all men and women have access to equitable educational opportunities. - **4.3**
2. Rent field lights and properly organize training areas to provide a safe, nonviolent, and effective learning environment for students. - **4.a**

Basketball Refereeing and Rules Training Club

1. Develop problem-solving skills and resilience to deal with stressful situations by assisting on the sidelines, at the recording table or as a referee. - **4.4**
2. The main objective of the Basketball Referee Club is to cultivate professional basketball recorders and referees who have a certain level of knowledge of basketball rules and regulations. - **4.7**

Chong-de Volunteer Club

1. Arrange for a volunteer social work class each semester to teach how to serve the public. - **4.4**
2. Organize a beach cleanup program with volunteers every semester to reduce trash on the beach and protect the environment. - **14.1**
3. Collaborate with other schools' voluntary clubs to integrate available resources and maximize service benefits. - **17.17**

Animation and Comic Study Club

1. Provide students interested in learning animations with space, relevant tools and professional social workers, and make the rest affordable to ensure that both men and women have the opportunity to learn creative painting. - **4.3**
2. Train professional animation talents and introduce them to related jobs for employment. - **4.4**

Love Thy Neighbors Club

1. Through the club program, teachers lead students to learn about different cultures and listen to different opinions. - **4.7**
2. Through the interactive program, the elementary school students learn about their hometowns, speak their minds, and discuss with the university students. - **10.2**
3. Organize camps in remote areas during summer and winter vacations so that university students and children can interact and learn from each other. - **11.a**

Transfer Student Association

1. Organize a tea party and briefing at the beginning of the school year for transfer students to exchange ideas and help them familiarize themselves with the school, so as to reduce disparities between non-transfer students and transfer students. - **10.3**

Guzheng Club

1. Provide students interested in learning Guzheng with a venue: a Guzheng and a teacher, and all other affordable materials to ensure that both men and women have the opportunity to learn. - **4.3**
2. Hold one or two concerts per semester for appreciation, and pass on the guzheng music. - **4.7**

▲ Love Thy Neighbors Club

2. Rooting in remote areas to fulfill social responsibility by organizing camps.

   Counseling Non-Urban Senior High Schools to Develop Flexible Curriculum : Teachers and students independently organize theme camps to help the remote and underprivileged groups. 45 camps were held in 2019-2022, including basketball, culture, summer science fair training, chess, high school English, elementary bilingual learning, and Vietnamese, Indonesian, and chemistry experiments for high school students with new resident parents.

2019 : 11 teams / 759 people

Theme	Participating school
Route 17 Science Feast III.	Kaohsiung: Yong-an, An-nan, Xin-gang, Wei-xin, Shou-lin, Mituo & Jia-wei Primary Schools
Remote School Robot Camp 2019	Duo-na Primary School, Kaohsiung
Remote School Robot Camp 2019	Lan-yu Primary School, Taitung
Kaohsiung High School & Vocational School Science Exploration & Competition Camp	Nationwide senior high school students
2019 National Collegiate and High School Physics Debate Competition Camp	Nationwide senior high school students
Innovation Development Camp	Hou-jin Junior High
Character Basketball Camp	You-chang Junior High
Bike the Way	Tzi-De Children's Home, Xu-hai Little School, Pingtung, Good Shepherd Children's Home, Grace Children's Home, Changhua, Anren Children's Home, Chiayi
Character Basketball Camp	Da-ming Primary School, Pingtung
Athletics Camp	Yu-jing Primary School, Tainan
2019 Kaohsiung High School & Vocational School Science Exploration & Competition Camp (semifinals, finals)	Nationwide senior high school students

2020 : 14teams / 765 people

Theme	Participating school
Co-learning with Vietnamese Senior High School Students & Chemical Experiment Camp	Chiayi: Jia-hua & Chiayi Tainan: Chang Jung Kaohsiung: Feng-shan, Feng-hsin, Zhong-shan, Kaohsiung, Xin-xing, St. Dominic, Xin-zhuang, Affiliated High of National Kaohsiung Normal University, Guoguang, Fu-cheng, Kaohsiung Commerce Vocational Pingtung: Dong-gan, Chao-zhou
Smart Robot Camp for Remote School Children	Duo-na Primary School, Kaohsiung
Smart Robot Camp for Remote School Children	Jia-wei Primary School, Kaohsiung
Smart Robot Camp for Remote School Children	Lan-yu Primary School, Taitung
IoT Design and Basic Programming Camp I	Kaohsiung: Zhong-zheng High, Kaohsiung Industrial Vocational High, Zhong-shan Vocational High, St. Dominic High, Guoguang High, Wen-shan, Jia-chang Primary, Jia-chang Junior High. Pingtung: Lu-xing High
IoT Design and Basic Programming Camp II	Kaohsiung: Zhong-zheng High, Zuo-ying High, Affiliated High of National Kaohsiung Normal University, Wen-shan High, Guo-chang Junior High, Feng-shan High Pingtung: Lu-xing High
Summer High School Science Fair Training Camp	Nationwide senior high school students
Nature Symphony –Ecological Defense War I	Fang-liao Primary School (Pingtung)
Character Basketball Camp	Hou-jin Junior High
2020 Shiny Seeds Summer Camp	Si-lin Primary School(Pingtung)
Love for Taiwan – Going Home	Zhong-lu Primary School(Kaohsiung)
Fun Innovative Science Summer Camp	Xi-kou Primary School(Kinmen), Xian-an Primary School(Kinmen)
Popular Science Game at Long-mu Primary School	Long-mu Primary School (Kaohsiung)
Popular Science Practice Camp	Feng-yuan Senior High

2021 : 10 teams / 455 people

Theme	Participating school
Pingtung Girls' High School English Camp	Pingtung Girl High School (Pingtung) online
Parent-child Chess Camp	Online
Character Basketball Camp	You-chang Junior High
2021 Shiny Winter Camp	Cong-wen Primary School (Pingtung)
Science Competition Training Camp – at Kaohsiung Medical Uni.	Nationwide senior high school students
Science Competition Training Camp-at Taipei Tech	Nationwide senior high school students
Science Competition Training Camp- Online 1	Nationwide senior high school students
Science Competition Training Camp- Online II	Nationwide senior high school students
Science Competition Training Camp- Online III	Nationwide senior high school students
Bilingual Camp	Shi-long Primary School

2022 : 10 teams / 478 people

Theme	Participating school
Popular Science Summer Camp	Kaohsiung:Tao-yuan Primary School , Yuan-zhong Primary School
Bionic Materials Science Camp	Kaohsiung:Xin-zhuang Senior High,San-min Junior High Tainan:Tzu-ji Senior High
SDGs Promotion Camp	Kaohsiung:Jia-chang Primary School ,Xin-zhuang Senior High
2022 Senior High School Architecture Summer Camp	Nationwide senior high school students
2022 Professional & Business English Summer Camp	Tainan:The Affiliated Senior High School of National University of Tainan
2022 English Winter Camp	Tainan:Jia-qi Girls' High School
Love For Taiwan	I-lan:Tou-cheng Primary School
People Connections	Kaohsiung:Yuan-zhong Primary School
Dream NEW Thinking	Kaohsiung:Guo-chang Junior High
Love For Taiwan	Taitung:Long-tian Primary School, Rui-yuan Primary School Kaohsiung:Tao-yuan Primary School

6.3.3 Alumni Links and Interactions

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By inviting alumni to share their career and workplace experiences, the program is designed to share with students in a way that is close to them and in a conversational manner. In addition to increasing the participation rate of current students, the program also strengthens the connection between alumni and the university.

The survey of graduates' flow was conducted in cooperation with the Ministry of Education. Through telephone interviews, the survey was completed, and the contacts between the present students and alumni provided an additional channel of interaction between the current students and the graduates.

6.3.4 Social Links

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The University actively communicates and interacts with local enterprises or communities, and participates in industrial cluster alliances such as the Taiwan Ciaotou Science Park Academia Industry Consortium (TTCSPAIC) and Academia-Industry Consortium for Southern Taiwan Science Park, and serves as an important position in these alliances, such as the director and supervisor of TTCSPAIC, and a board member of the Alliance of Green Universities. The University joined National University System of Taiwan in 2021, and also participated in various programs within the working circle in 2022, such as laboratory exchange and organizing seminars in special fields. Since 2018 the University joined Southern Taiwan International Industry-University Consortium, as well as Youth Bureau of Kaohsiung City Government, Small and Medium Enterprises Administration of the Ministry of Economic Affairs, and Taiwan Startup Terrace, it has participated in various programs aiming at promoting the incubation of new innovations, assisting in the transformation of enterprises, and matching the cooperation of industries, in order to fulfill the goals of the university services of industrial and social linkage. The following inter-school and inter-unit cooperation mechanisms have been established over the years:

1. Established strategic alliances for academic exchanges: Sign academic exchange agreements and strategic alliance contracts with 11 schools including Open University of Kaohsiung, National Sun Yat-Sen University, National Cheng-Kung University, National Defense University, National Quemoy University, Taiwan Shoufu University, Kaohsiung Medical University, I-Shou University, Air Force Academy, National Taitung University, and Military Academy. In addition to the promotion of the domestic exchange system, cooperation agreements such as inter-university double major and inter-university minor were signed to sustain the sharing of learning resources across universities.

2. Joined "National University System of Taiwan ": the University joined National University System of Taiwan in 2021. Since then, it has established an exchange platform with other universities and colleges, and sought multiple connections with them such as teaching, research, and talent cultivation.

3. Joined "Global Research and Industry Alliance": Since 2017, the University has participated in Global Research and Industry Alliance integrating the R&D capacity of five universities including Sun Yat-sen University, Kaohsiung Medical University, Pingtung University of Science and Technology, and I-shou University, and recruited member companies to integrate cross-university resources and promote industry-academia cooperation and technology transfer.

4. Join Green University Alliance: In order to realize the spirit of green universities, the University has joined the Alliance, which combines the strengths of various universities to share related information and inter-university cooperation, as well as to strive for resources. The President of the University is also the fifth member of the Board of Directors, in order to strengthen the cooperation with the government, the community and corporate resources, and to promote the concept of sustainability of green universities and intercollegiate and internationalization strategies.

5. Consolidating national education and co-learning service programs: In response to the 108 Curriculum teaching model and students' learning styles, the University formed an "Education Action Alliance" with high schools in Kaohsiung area, integrating resources to help them create diversified elective courses with special characteristics; continued to work with Renwu High School and the Renda Industrial Zone to set up the "Petrochemical Industry Renda Specialized Class", assisting in the planning and development of special practicum; and promoted National Education Practice Program to promote education in remote areas, and thus to consolidate national education and the spirit of co-learning.

6.4 Industry-Government-Academia Cooperation and Exchanges

6.4.1 Industry-Government-School Cooperation and Recommendations

The University combines teachers' professional development with distinctive courses and curriculum to enrich the USR team's sustainable management. In 2022, it undertook projects from various ministries, including the Ministry of Education, the Ministry of Economic Affairs, the Ministry of Labor, the Ministry of Finance, Control Yuan, Toxic and Chemical Substances Bureau, EPA of Executive Yuan, Council of Agriculture of Executive Yuan, and Kaohsiung City and Pingtung County governments. The contents of these projects include local revitalization, conservation of historical buildings, promotion of disaster awareness, gender equality, incubation of entrepreneurship, digital education, and sustainable development. In the process, a robust interaction between industry, government, and academia was established, and suggestions were made on the research areas of the program.

1. **Cultivating High-end Talents for Industry Development through Learning and Utilization Integration**

   A. Industry In-service Master's Program: Through the curriculum structure of basic theory courses, professional core courses, practical courses, and thesis research, the program aims to build up basic knowledge related to smart technologies for semiconductor manufacturing. Since the Department of Electrical Engineering started to offer this type of program in 2015, more than 70% of the graduates have been employed by our partner company i.e., ASE Semiconductor, and the students' competence has been recognized by the company, and some of the graduated alumni have been employed as middle- and high-level executives.

   B. Advanced Management Talent Training Center: Since 1994, the University has been offering the Executive Master of Business Administration (EMBA), Executive Master of Law and Business Administration (EMLBA), and In-Service International Executive Master of Business Administration (IEMBA) to assist Taiwanese businesspeople to reinforce their knowledge in advanced legal and management skills required by the globalization.

2. **Linking academic programs to industrial resources to enhance students' competitiveness**

   A. Establishment of the Artificial Intelligence Research Center: In 2018, the University integrated six departments and 18 faculty members to establish the Center for Artificial Intelligence Research, which develops the "Machine Learning" program and two forward-looking programs in the areas of "Artificial Intelligence and Financial Technology" and "Artificial Intelligence and Data Science." The curriculum emphasizes the integration of competition, publications, internships, and certification, and connects with industrial resources to strengthen the competitiveness of the students' careers.

   B. Establishment of ASE-NUK Industry-Academia Cooperation Center: Collaborate with ASE to offer a general education course on "Semiconductor Technology and Life", which will enhance students' understanding of the manufacturing process semiconductor and global market trends, and improve their competitiveness in the workplace.

   C. Upgrading "AVR+School" to "XR School": The first AVR+School was established to respond to industry trends and government policies, strengthen the teaching and research capacity of 5G and AIoT, and cultivate forward-looking technological talents. In addition, it was upgraded to the XR School in 2022, and developed the XR micro-credit program, somatosensory technology, and digital innovation program to cultivate somatosensory talents, and strengthen the teaching and research capacity of the digital twin industry.

3. **Collaborated with Kaohsiung City Government to build a "resilient city" and provided recommendations for implementation.**

   In 2020, the USR-Hub seed team was formed to combine the concept of "resilient city" with the Disaster Prevention and Rescue Technology Research Center to develop the "Resilient Community Building and Sustainable City Training Program," investing in resilient community building courses and training for disaster prevention officers, and providing cumulative counseling to nine resilient communities in Kaohsiung City to promote community-led disaster prevention and organizing training for disaster prevention officers with 477 participants, so that they become National Fire Agency of Ministry of the Interior certified disaster prevention officers.

4. **Sustainable action to build a "Cultural Space Revitalization Platform" that balances the preservation of cultural resources and urban development.**

   Focusing on humanistic energy and community cultural venues, the project developed the "Cultural Space Revitalization Platform" by combining higher education and urban development issues to strengthen the integration of humanistic history, cultural space preservation and local sustainable development, and assist the government in striking a balance between cultural asset preservation and urban development.
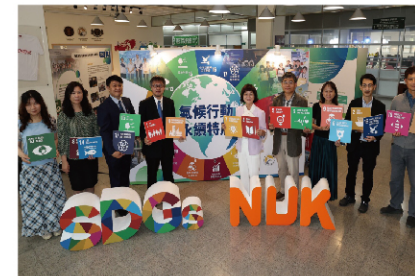
▲ Climate Action Sustainability Exhibition ▲ Conference on AI and Legal Discourse 2022

6.4.2 Support New Sustainable Enterprises

1. In 2022, the school's Incubation Center undertook the "Small and Medium Enterprise Development Program" of Small and Medium Enterprise Administration of the Ministry of Economic Affairs, and supported the Dashu Local Youth Incubation Team's music base, and the regenerating program of Zuoying Military Village by "Mobile Tribe", by investing resources, introducing teachers and students to join, and assisting in organizing workshops and local revitalizing activities to fostering local enterprises.

2. The school's incubation center is one of the five O'START satellite counseling schools of the Youth Bureau of Kaohsiung City Government. It is coordinated and integrated by the Youth Bureau to provide professional consulting services for young people who are new and interested in starting a business in Northern Kaohsiung. In 2022, the number of consultations reached 51.

6.5 International Exchanges and Partnerships

6.5.1 International Student Sources and Exchanges

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1. Establishing a stable and close communication platform with global partners to stabilize the international student population and enhance international cooperation.

   A. Establishment of sister schools and signing of joint dual-degree structure: Currently, there are 350 overseas sister schools, 88% of which are located in Asia, and 7 sister schools have signed joint dual-degree structure with a total of 12 programs. 272 foreign exchange students were enrolled in 2017-2020, and 243 students went abroad on exchange. In 2020, due to the impact of the COVID-19 pandemic, the number of exchange students and interns, both going abroad and coming from abroad, affected by border control, was greatly reduced. However, through active participation in online recruitment, the number of foreign students in 2021 still increased by 21.74% compared to the previous year.

   B. Establishment of an International College: The International College was established in the 2018 to integrate all foreign language curriculums, optimize internationalized teaching and learning environment for learning Chinese, and offer credit-bearing programs in all English to enhance learning and career matching.

   C. Establishment of Medan Office in Indonesia by combining the alumni association network: To set up an overseas office to explore opportunities for internships, study abroad and exchanges. 131 Indonesian students were recommended to study in the University from 2019 to 2022, which is the most important source of foreign students.

   D. Cooperation with Taiwan Study Support Center: Promoting Japanese students to study in Taiwan, the number of Japanese students in the school increased from 13 to 20 in 2020-2022.

▼ **International Cooperation & Interchange 2020-2022**

Item	Result
No. Actual exchange	135 (350 signatures, 39% interaction rate)
No. Signing join dual-degree	7
No. Exchange btw NUK & sister schools	118
No. Visit from sister schools	38
No. Visit to sister schools	16
No. Incoming exchange students	272
No. Outgoing exchange students	243

2. Strengthen the mechanism and effectiveness of students' transnational learning.

   A. Communicating and coordinating with sister schools for intra-school exchange every year.

   B. Discuss the courses in the exchange school will match the students' majors in their original institution.

   C. Since 2015, the school has been subsidized by the Ministry of Education's Xuehai Scholarship every year, and has recommended many students to go abroad for exchange and internship. From 2019 to 2022, a total of 243 students have been recommended to go abroad for exchange. The application of the Xuehai Scholarship gives students financial support and provides underprivileged students with opportunities to reduce economic pressure.

   D. The school organizes regular seminars on overseas exchange and scholarship application every year to promote the information on scholarship application and internal selection, and to share the information on overseas exchange and preparation for scholarship application through students' experience sharing by sharing meeting and experience report.

3. Implement a mechanism to support and counsel overseas students in their academic studies.

   A. Provide support for studying Chinese: In order to enhance the listening, speaking, reading, and writing skills of non-native Chinese speaking students, a Chinese conversation class is offered to teach language skills such as listening comprehension and oral expression in Chinese to enhance students' listening and speaking skills; and a Chinese reading class is offered to teach writing, Chinese characters and reading comprehension through communication strategies.

▼ **Chinese Courses 2019-2022**

No. course Semester	Conversation (No. Student)	Reading (No. Student)
Fall 2019	1 / 32	1 / 18
Spring 2019	1 / 21	1 / 11
Fall 2020	0[a]	1 / 6
Spring 2020	0[a]	1 / 3
Fall 2021	0[a]	1 / 13
Spring 2021	0[a]	1 / 8
Fall 2022	1 /28	1 / 24

Description: a. The number of international exchange students decreased due to the COVID-19 outbreak.

B. Assist overseas students to enhance the effectiveness of their academic learning: The University offers a Chinese language program for foreign students and implements systematic grade-level and classroom teaching to strengthen the skills to listen, speak, read, and write in Chinese. The school regularly tracks the status of the courses and encourages the acquisition of basic Chinese language qualifications for the students to facilitate their learning and adapt to life.

C. To provide international study partners to assist overseas students with administrative support and application procedures, such as visa and course selections. After training, international study partners also assist foreign students in handling various matters.

6.5.2 International Academic and Cultural Exchange

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1. Combine the characteristics of digital technology and internationalization to promote the international exchange of SDGs links:

A. Refine learning of Southeast Asian language and develop iCAP functionally oriented instructor-led MOOCs courses:

a. Combined with the school's international characteristics, the University continues to develop Vietnamese and Thai and other Southeast Asian functional language courses for MOOCs. At the same time, physical courses will be offered to implement flipped teaching to strengthen learning.

b. A total of 16 teachers participated in the production of digital teaching materials, and a total of 885 teaching materials for 30 courses were produced and made available for students to view on an audio-visual platform with high quality.

c. With reference to Workforce Development Agency, MOL function-oriented iCAP "Semiconductor Industry Manufacturing - Process Engineer Benchmarks" and experts in the microfilm manufacturing industry jointly developed the "Semiconductor Microfilm Manufacturing Process" function-oriented MOOCs course to cultivate students with behavioral indexes and functional connotations of junior microfilm engineers, which were also launched on TaiwanLIFE learning platform in November, 2022.

B. Link international mobile courses/programs with SDGs: link international sister schools with SDGs issues, develop international mobile courses and Asia Virtual Academy, and deepen practical exchanges and interactions under the theme of "Global Studies and Sustainability".

2. Organize international exchanges and academic cooperation activities with sister schools.

A. Asia Virtual Academy: The University is committed to connecting with the international community through SDGs and has established the Asia Virtual Academy (AVA) as a platform for knowledge and cultural exchanges since 2021, inviting 8 schools from 6 countries to share in the event. Each school takes turns inviting experts and scholars to give lectures online, which are open to teachers and students from partner schools and can be viewed on platforms such as YouTube and Facebook, with zero time lag in real-time exchanges, AVA has held 13 webinars and 3 online forums since its opening.

B. International Young Sustainability Leaders-Online-SDGs Innovation Competition (IYSL): in 2019-2022, the University organized three IYSL Online-SDGs Innovation Competitions to encourage university students to develop their creativity and global citizenship, and to fulfill their social responsibilities; IYSL 2020 was held in a physical manner. Since 2021, the impact of the Covid pandemic has shifted the competition online, attracting more like-minded international partner schools to join the event.

6.5.3 Co-Author Papers or Collect Data with Other Countries to Fulfill Sustainability Goals

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Since 2023, the University has conducted an inventory of co-authored papers and publications with other countries in order to collect and consolidate data related to the SDGs. 58 papers were published in 2022, of which 44 were journal papers, 2 were conference papers, and 12 were books. 40 of these publications were related to the SDGs, with SDG9 (industry, innovation, and infrastructure), SDG7 (affordable clean energy), and SDG8 (decent work and economic growth) being the major ones, in order to understand the expertise of our research areas and strengthen our research capacity, as well as to continue to enhance our academic impact through the publications.

6.6 Vocational Training and Lifelong Learning Operations

In order to provide diversified channels for further study and to meet the learning needs of the community, the University has set up the Extension Education Center since 2000, which combines teaching resources and teachers to provide practical and life-oriented short-term study courses. Bachelor's and Master's credit-bearing courses are also offered to provide for those who intend to study for a degree, and the University for Seniors is also being established to promote elderly education and life-long learning and to satisfy the needs of various fields of study.

6.6.1 Lifelong Learning

In addition to offering credit courses in management, law, information, language, architecture, and electrical engineering in conjunction with related departments of the University, the University also integrates into local life by offering practical and life-oriented courses in language learning, health care, childcare, law, and life knowledge. The University also cooperates with the Kaohsiung City Government in establishing the Citizen's Academy, which offers a total of 117 classes in 2022, to satisfy the learning needs of the community at large.

In order to promote elderly education, the University for Seniors has been established to combine the professional teachers of the University to teach the elderly exercise, and practical life and legal knowledge, and provide guidance to establish learning societies for the elderly, so as to assist the elderly to return to school and enjoy learning independently. The program has been in operation since 2017 and has been fully enrolled since then, with a total of 422 enrollments.

In order to provide more diversified viewpoints and perspectives to our faculty, staff, students, and the community at large, and to inspire new thinking, the University organizes the "NUK Excellence Lecture", inviting distinguished speakers from all walks of life, including industry, government, academia, and research institutes, to deliver lectures, integrating and sharing teaching resources, and enhancing learning rapport on campus, with a total of 19 lectures to be held in 2022.

▲ University for Seniors

▲ Activities of "NUK Excellence Lecture"

6.6.2 Functional Training

In order to strengthen the connection with the local industry, the University participates in the Industrial Talent Cultivation Program, planning specialized courses in line with industry trends, strengthening functional training, connecting with the needs of the industry, and fostering new-generation industrial talents.

The school cooperates with government agencies to provide functional training, and cooperates with Regional Brach of Kaohsiung, Pingtung, Penghu and Taitung, Workforce Development Agency, MOL and Council of Indigenous Peoples to provide various vocational training courses such as the vocational training program for the unemployed, the pilot program for new industrial pioneers, the investment program for industrial talents, and the manpower enhancement program for small enterprises to train professionals. It also plans practical-oriented and employment-oriented courses, arranges corporate internships, company visits, industry trend seminars, and employment matchmaking meetings to provide vocational training for the unemployed, as well as functional education for the working population, and develops corporate-chartered classes to provide customized education and training, with a total of 18 classes to be held in 2022.

▲ NUK Excellence Lecture

▲ Functional training

National University of Kaohsiung

Sustainability Report 2022

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