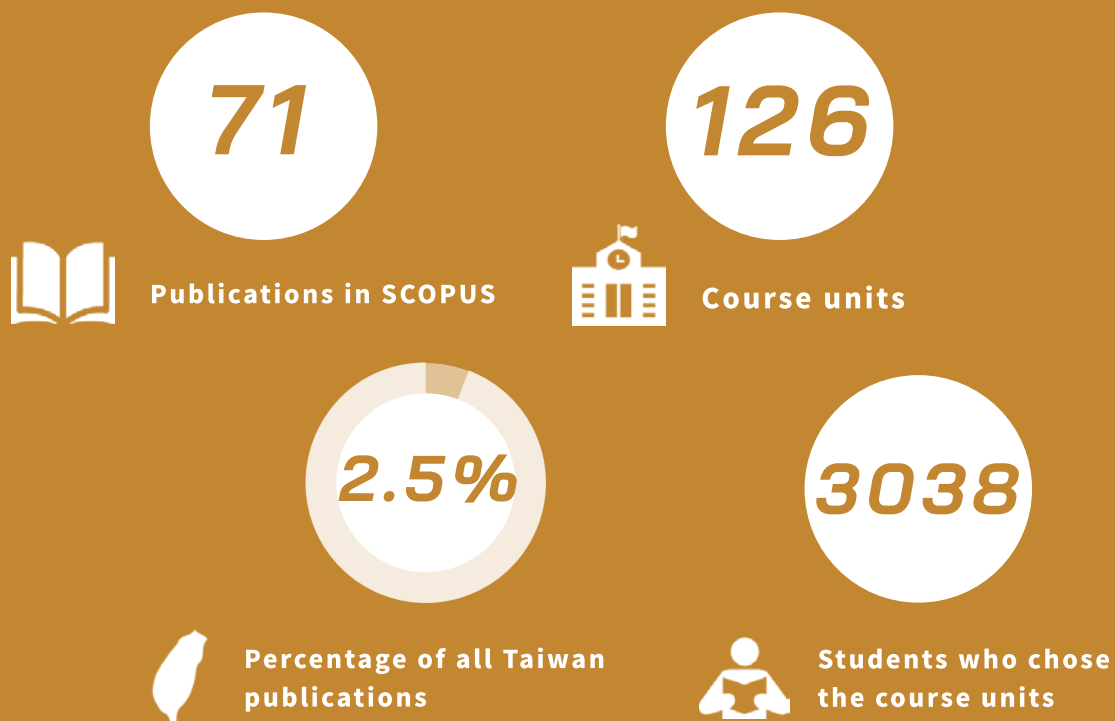


12

RESPONSIBLE CONSUMPTION AND PRODUCTION

*Ensure sustainable consumption and production patterns.
Ensure sustainable consumption and production patterns.
Ensure sustainable consumption and production patterns.*



Research

Smart Clothing Applications and Realistic Virtual Try-on Features

The team led by NYCU's Professor Chain-Shu Hsu and Professor Jiun-Tai Chen has developed fibers with self-repairing properties through the interaction of polymers and ionic liquids. Once made into a material, it can maintain its structure for a long time and repair itself repeatedly. The manufacturing process is simple, the cost is low, and it can be integrated into existing industrial textile technology and applied to advanced smart wearable devices. In addition, the virtual try-on technology developed by the team led by Professor Wen-Huang Cheng of the NYCU Institute of Electronics represents an emerging technology based on developments in artificial intelligence and deep learning. The technology gained particular relevance during the COVID-19 pandemic, when shopping habits shifted to contactless e-commerce. This technology aims to bridge the gap between online and offline clothes shopping, allowing consumers to get what they want more conveniently, reducing the rate of returns, and lowering the carbon footprint. It is predicted to revolutionize people's shopping experience in the future.

Center for Intelligent Photonics in Agricultural Robotics (CiPAR)

The NYCU Center for Intelligent Photonics in Agricultural Robotics was established based on years of research and development achievements regarding smart optoelectronic components, imaging systems, and laser systems. In response to issues such as severe climate change, population aging, labor shortages, and overuse of pesticides faced by the agriculture industry worldwide, the center creates prototypes for economical field robots suitable for different farmlands and farming needs. In a shining example of industry-academia collaboration, innovative prototypes created by the center are sent to a start-up department, team, or company through spin-ins or spin-offs, so that companies can start mass-producing the prototypes immediately. In this way, field robots can be quickly implemented, thus creating value for agriculture. One team, led by Professor Shean-Jen Chen, developed an orchard robot with a laser pest controller that can work for 24 hours a day. By applying smart optoelectronics and unmanned ground vehicle technology to develop how we can conduct electric, smart, and unmanned agriculture, the team created a win-win for both agriculture and smart technology.



Social Impact

Global Public Welfare Forum

To take on social responsibilities, the NYCU College of Management and the Lee and Li Foundation organized the Global Public Welfare Forum. The forum is completely free of charge, which encourages interested individuals and organizations to participate. Through such dialog in society, we can prepare ourselves to face the major issues brought about by globalization and technological advances. The 2021 forum topics included “Technology Application and Supply Chain Development,” “Corporate Social Responsibility and the Circular Economy,” and “Urban and Rural Sustainability and Environmental Education,” among others. Participants at the forum discussed emerging technology applications and environmental issues in corporate supply chains, as well as the transition from traditional agriculture and how to achieve a positive cycle of sustainable development.

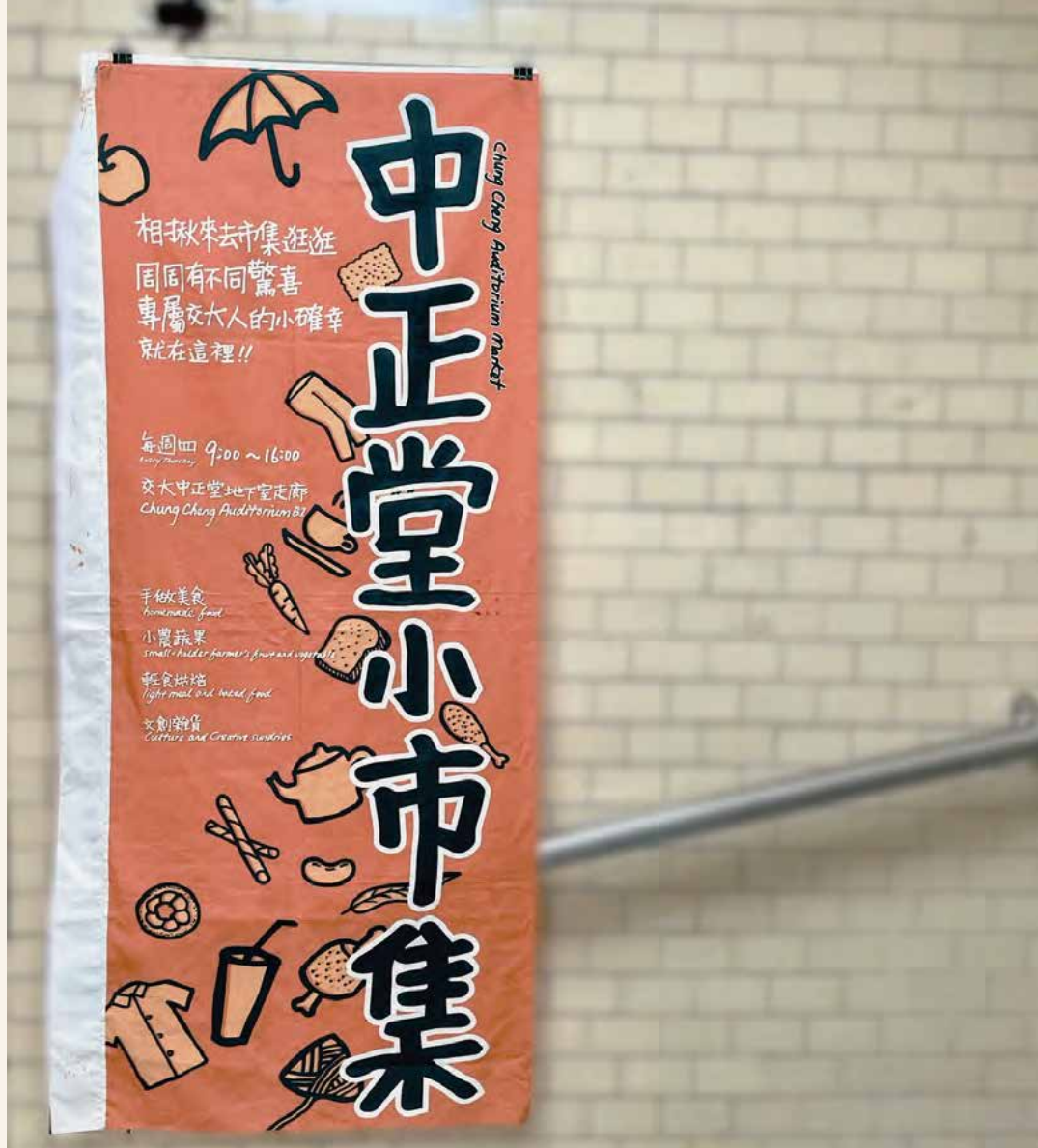


Student Cultivation

Environmentally Friendly Events

NYCU student clubs organize various activities on a non-regular basis. For example, the YMCE organizes charity flea markets to encourage the exchange of second-hand goods. The Eco Designer Club, meanwhile, organizes courses on resource recycling and classification during its regular meeting times to promote campus environmental protection and environmental friendliness. Elsewhere, the “Organic Agriculture and Harmonious Development of Protection, Life, and Ecology” lecture organized by the Institute of Communication Studies discussed the current situation, challenges, and outlook with regard to organic farming in Taiwan. The lecture discussed the importance of strengthening the functionality of organic farming now that Taiwan has developed mature policies and regulations and highlighted our need for organic farming from the perspectives of ecology, life, and production. In addition, in view of the large number of people who sign up for beach cleanups as part of NYCU's service-learning course, NYCU invited the Society of Wilderness to hold a “Beach Cleaning and Marine Waste” service-learning lecture so that students could be better prepared. The lecture improved students’ knowledge regarding beach cleanups and the marine environment. Carrying out a meaningful beach cleaning and marine waste monitoring event should not only involve picking up the waste but also sorting and analyzing it. By doing so, we can provide useful marine waste composition data the government can use to formulate relevant policies and solutions.





Stewardship

Abandoned Bicycles, Second-Hand Equipment Recycling, and Green Consumption

To effectively manage bicycle parking on campus and avoid a buildup of unused bicycles, NYCU has been recycling abandoned bicycles for years. Bicycles deemed abandoned are towed to a clearing for students, teachers, and staff to claim before they are cleared away. This ensures the rational use of resources and avoids unnecessary accumulation of waste on campus.

Meanwhile, to help new faculty members set up laboratories and utilize lab resources, NYCU's College of Life Sciences launched a donation event for research and office equipment, encouraging faculty members to provide a list of their infrequently used equipment that may be better utilized in another lab, to encourage the use of second-hand resources and save both money and space.

Plus, at the weekly market held at Zhongzheng Hall, the university co-op store and the Student Council work together to feature seasonal ingredients and agricultural products, sourced from local independent farmers and vendors, to achieve green consumption.

Circular Knowledge - Extending the Value of Books

The NYCU Libraries have long accepted donations of new or second-hand books and periodicals from organizations or the public, giving out duplicate books or magazines to readers who would like them. For that reason, staff put out books from time to time in the periodicals section on the third floor and the learning space on the second floor of NYCU's Chiaotung Campus Library for readers to take home. During the annual library week event, the librarians also select books in good condition from donated books to give away. The 2021 Library Week held an event titled "Book Adoption—Our Circular Economy, Our Shared Knowledge," which was warmly welcomed by visitors. A total of 882 books and periodicals were given out during the event, extending their circular value and reducing waste and recycling loads. This allowed readers who cannot purchase books due to the financial burden or other reasons to start their own book collection, supporting their right to access and obtain knowledge.

