

**National Taiwan University**

**Medium-Term University Development Plan**

Academic Years 2024 to 2028

July 31, 2024

## **Vision and Missions**

National Taiwan University (NTU) is renowned for its diverse fields of study, relentless pursuit of academic excellence, and robust international connections. As Taiwan's most iconic higher education institution, NTU has become a leading university in Asia and a world-class institution.

Looking ahead, NTU commits to revamping itself to meet the challenges of the new era of digitalization, smart technology, sustainability, and resource optimization. Guided by the vision to "Build a World-class University that Embodies a Century of Glory," NTU aims for all its colleges and departments to become top academic units in Asia, if not the world, in their respective fields. We set our missions to address major issues facing humanity and nurture students with all-around proficiencies, including professional skills, social consciousness, international perspectives, and leadership qualities.

Under this vision, NTU embraces the following key missions:

- Upholding academic freedom, pursuing truth, and shaping a character respected by the international community.
- Cultivating leaders endowed with creativity, leadership, execution, and altruistic spirit to excel in various professional fields.
- Encouraging faculty and students to bravely embrace challenges, solving problems critical for human sustainability, leading global development, and thereby advancing world civilization.
- Providing guidance in policymaking, driving social trends and movements, and leveraging its vast knowledge to contribute to the advancement of the nation and society.

## **Overview and Facts**

NTU's research extends into five major academic disciplines: Humanities and Arts, Mathematics and Natural Science, Engineering and Applied Science, Life Science and Agriculture, and Social Sciences, with exceptional performance in these areas. According to the QS World University Rankings by Subject released in April 2024, NTU ranks within the top 100 globally in all five broad subject areas, making it the only research university in Taiwan to be ranked in the top 100 worldwide. Out of the

55 subjects evaluated, NTU made the list on 44, with six ranked the top 50 and 32 ranked the top 100.

NTU has built strong connections with international counterparts, with over 600 partner institutions worldwide and more than 700 study abroad programs. Annually, over 1,000 students participate in these programs. NTU's alumni have accumulated remarkable achievements globally in their fields of expertise, with five scholars receiving prestigious academic awards such as the Nobel Prize, Turing Award, Wolf Prize, and Tang Prize. Additionally, 10 alumni have served or are serving as heads of state and about 80 as chairpersons of major enterprises.

To enhance its competitiveness on the international stage, NTU has selected benchmark schools to surpass itself, with the University of Tokyo (UTokyo) as a short to medium-term benchmark and the University of California, Los Angeles (UCLA) as a long-term benchmark.

Despite different strategic focuses, both benchmark schools share common practices in academic research, talent cultivation and recruitment, industry-academia innovation, and internationalization. NTU summarizes five common measures worth drawing inspiration from:

- 1. Targeting key areas of international significance for cutting-edge teaching and research:** Focusing on subjects that have the most potential for international impacts and reducing barriers to interdisciplinary teaching and research to spearhead in these areas.
- 2. Forging strong international strategic partnerships:** Transition from single-point cooperation by individual faculty members to team or institutional exchanges in teaching, research, and industry-academia collaboration.
- 3. Integrated platform for international affairs:** Improving campus internationalization, promoting academic and research exchanges, and enhancing connections with overseas alumni and students, thereby systematically supporting faculty and students in teaching, research, and collaboration.
- 4. Diversified funding sources and strong self-funding abilities:** For instance, expanding technology transfer to increase commercialization revenue, offering self-sustaining degree programs like distance education and summer academies, and strengthening alumni and public engagement, increasing their understanding of the university's directions and gaining their support.

5. **Engaging in structural reform and flexibility overhaul:** Implementing more adaptable structures and support systems in response to new modes of teaching, research, and international cooperation to improve efficiency and effectiveness.

## SWOT Analysis

For a world-class university, three crucial elements are essential: an influx of outstanding talents, abundant funds and resources, and flexible, autonomous governance. NTU aspires to be on par with the University of Tokyo (UTokyo) and the University of California, Los Angeles (UCLA) in terms of resources, field-specific competitiveness, academic performance, internationalization, and industry linkages. To this end, we conducted a SWOT analysis of NTU, examining its strengths, weaknesses, opportunities, and threats based on its human and financial resource inputs and performances, positioning, and external circumstances. As shown in the table below, these factors form the basis for NTU to develop strategies to fully leverage its strengths, overcome its weaknesses, seize opportunities, and address threats.

SWOT Analysis

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Renowned internationally as the most prestigious and representative university in Taiwan.</li> <li>• Diverse and comprehensive subject coverage, with strong international rankings in all five major subject areas, fostering interdisciplinary learning and collaboration both domestically and internationally.</li> <li>• Rich in digital learning resources, with a strong MOOCs (Massive Open Online Courses) brand within the Chinese-speaking community.</li> <li>• Being an international academic and research hub with distinctive Asian Chinese cultural features.</li> </ul>	<ul style="list-style-type: none"> <li>• Despite efforts to enhance the field knowledge and teaching skills of teaching assistants, the insufficient number of teaching assistants still leaves faculty with a heavy administrative and teaching load.</li> <li>• Domain specialization and international influence should be further improved.</li> <li>• Campus environment is not yet fully oriented toward international audiences.</li> <li>• World-class academic research performances have yet reached an impactful level.</li> <li>• Financial operation restricted by regulatory constraints and expenditures also subject to strict government regulations, resulting in insufficient autonomy and flexibility.</li> </ul>

<ul style="list-style-type: none"> <li>• Home to numerous distinguished alumni who shine in various fields worldwide.</li> <li>• Poised to cultivate talents with international mobility and knowledge innovations.</li> <li>• Excellent educational infrastructure and resources, with services available nationally.</li> <li>• Extensive mechanisms for fostering innovation and entrepreneurship.</li> <li>• Flexible and diverse curriculum systems and course offerings.</li> </ul>	<ul style="list-style-type: none"> <li>• Despite offering flexible pay and talent retention and recruitment measures under the Ministry of Education's Yushan Fellow Program, there still exists a significant salary gap when compared internationally.</li> <li>• Low percentage of international faculty.</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Situated in Taiwan, the most free and democratic academic environment in the Chinese-speaking world.</li> <li>• Opportunities to attract Southeast Asian students, in conjunction with the government's New Southbound Policy, though stronger scholarship incentives are needed.</li> <li>• New learning modes enabled by digital technology warrant innovative directions and models for talent cultivation.</li> <li>• Generous and long-term scholarships for outstanding doctoral students.</li> <li>• Scholarships for promising undergraduate students to pursue doctoral degrees directly.</li> <li>• Industry-academia collaboration encouraged to apply research findings in practical settings.</li> </ul>	<ul style="list-style-type: none"> <li>• Public investments in higher education still insufficient, especially compared to leading universities in Asia.</li> <li>• Shortage and loss of higher education talents due to competitive salaries offered by international counterparts.</li> <li>• Universities worldwide actively forming strong alliances to advance research and talent cultivation collaborations.</li> <li>• Shortage of research talents trained in higher education due to declining birth rates in Taiwan.</li> </ul>

## **Development Directions**

As NTU approaches its centennial, it aims to build on the momentum and strengths accumulated over the past century, striving to achieve “Local Foundation, Global Connections, and World-class Excellence.” We are committed to nurturing social elites and innovative research talents, leading the way in solving major sustainable development issues, and continually advancing as a top global university.

Under the guidance of its vision and overarching goal, NTU formulated the following development directions for the next five years (from Academic Years 2024 to 2028):

### **1. Selecting Areas with International Competitiveness or Critical to Solving Major Sustainable Development Issues to Conduct Impactful Specialized Research**

NTU commands competitive advantages globally in many research areas. To enhance the research capacity and deepen international engagement in these areas, NTU will focus on these five major advantageous fields: Digital Humanities, Smart Technology, Sustainable Science, Innovative Materials, and Molecular Biomedicine. All of these fields align closely with the government program for promoting core strategic industries. To achieve breakthroughs in these key areas, in addition to existing university-wide projects, we have proposed 10 research centers focusing on information and digital technology, cybersecurity, precision health, green electricity and renewable energy, national defense and strategy, and civil and military preparedness. These research centers will be closely integrated with colleges and university-level research centers, forming a complete system to achieve the goals of the five major fields. The colleges and departments will serve as the foundation for these research centers, driving the university's comprehensive and rapid academic development, ultimately leading Taiwan to economic prosperity and achieving top-tier research in collaboration with valued strategic partners.

### **2. Cultivating Future Leaders with Global Connectedness**

NTU's missions revolve around “Innovative Knowledge,” “Talent Cultivation,” “Contributing to Society,” and “Fostering Innovation and Entrepreneurship.” Guided by the core values embodied in NTU's motto, “Integrity, Diligence, Fidelity, and Compassion,” we aim for future development in the areas of teaching advancement, academic excellence, global perspective, and social commitment. NTU aspires to be a top global university, nurturing leaders and innovative researchers who contribute to national and global economic development and address major sustainable development

issues. NTU aims to serve others, care for society, and drive social progress, making significant contributions to the world. To cultivate international leaders with humanistic literacy, professional knowledge, and global mobility, NTU will innovate to create an international-oriented campus, endowing students with global perspectives and the spirit to pursue excellence.

### **3. Integrating International Resources to Enhance Global Influence**

NTU will focus on alliance as the core mechanism for cooperation. By forming alliances, we aim to attract outstanding students from overseas high schools to study at NTU. Additionally, by leveraging these alliances, we will concentrate resources on developing partnerships, expanding from point-to-point research collaborations to broad, multinational, cross-institutional, and interdisciplinary partnerships. We aim to acquire leading positions within these alliances to increase our academic connections. Furthermore, through initiatives such as promotion and the establishment of think tanks, we will strengthen the dissemination of research and development outcomes, proactively seek a leading role in shaping discourse on key issues, and attract more international institutions to join our global cooperation network.

### **4. Strengthening Industry-Academia Collaboration to Drive Industrial Development**

As a comprehensive university with strong academic foundations, NTU will continue to leverage its strengths to establish a robust industry-academia collaboration system. The core of this system includes the Office of Research and Development (ORD)'s Center of Industry-Academia Collaboration and the Division of Industry Collaboration Resources, in combination with the Industry Liaison Office, Taidah Entrepreneurship Center (NTUTECH), and other related units. NTU will integrate internal resources horizontally, actively combine government, industry, academic, and research capacities, and build a professional organization to create a quality industry-academia collaboration environment. By developing innovative industries with top talents and cutting-edge research, NTU will establish joint R&D centers in emerging industrial fields, secure government and industry resources, market R&D results, assist industrial development, enhance national industrial competitiveness, and promote economic development for a sustainable and healthy social environment.

### **5. Acting as the Intellectual Powerhouse for Taiwan to Achieve Net Zero Carbon Emissions by 2050**

The National Development Council announced Taiwan's 2050 Net Zero Emissions Pathway in 2022, highlighting “technological research and development” as a crucial foundation for achieving a net-zero future. Higher education institutions will inevitably play a key role in this effort. As Taiwan's largest, most comprehensive, and internationally visible university, NTU upholds the spirit of “building campus sustainability internally while exerting positive social influence externally.” To address campus environmental management gaps, NTU will leverage faculty expertise to implement projects related to the environment, disaster prevention, and energy conservation. Furthermore, by integrating advanced network infrastructure with green energy, near-zero-energy buildings, and water-saving and waste-reduction facilities, NTU plans to create a demonstration field for a smart and sustainable campus, achieving low-carbon transformation goals for both the university and the nation.

In response to the United Nations Sustainable Development Goals (SDGs), NTU will drive sustainability initiatives from the very top in campus governance, teaching and research, and external services, addressing local issues and fulfilling its social responsibility as a university.

## **University Development Strategies and Goals**

To achieve the overarching goals of “Local Foundation, Global Connections, and World-class Excellence,” NTU has outlined 10 university development strategies based on the aforementioned five directions to realize its vision as a top international university:

1. Optimizing University Infrastructure—Building a Sustainable Smart Campus and Community
2. Targeting Key Areas of International Significance
3. Enhancing Collaboration and Influence within the International Academic Community
4. Incentivizing Research and Expanding Talent Recruitment and Retention
5. Strengthening Industry-Academia Collaboration to Drive Industrial Development
6. Promoting In-Depth and Interdisciplinary Learning
7. Advancing Self-Directed Learning and Research
8. Strengthening Enrollment Strategies and International Education Linkage
9. Implementing Robust Financial Planning and Fundraising
10. Embarking on Centennial Projects and Strengthening Alumni Connectedness



The following goals are expected to be obtained through the implementation of these development strategies:

### **1. Optimizing University Infrastructure—Building a Sustainable Smart Campus and Community**

- Building a Sustainable Smart Campus: By 2028, NTU will complete the installation of solar power systems on the Yunlin campus to enhance green energy production. We will also upgrade lighting to LED and convert street lights to smart lighting systems on the main campus to achieve energy savings.
- Optimizing Campus Infrastructure—New Buildings: By 2028, NTU aims to finish the construction of modern student dormitories, three staff dormitories, a teaching and research practice building, and the Min-Sheng Health Building on the main campus. Additionally, the branch campuses will see the completion of the Technology Innovation and Research Building and the Agricultural Machinery Education Training and Testing Center Building.
- Optimizing Campus Infrastructure—Renovations: By 2028, NTU will complete the renovation of six important buildings. These renovations will integrate green energy and sustainable facilities.
- Building a Digital Foundation for an AI University: NTU will utilize continuously evolving AI and ICT technologies to create a next-generation university service system. This includes developing multimodal campus services through generative AI and establishing the initial AI NTU by 2028.

### **2. Targeting Key Areas of International Significance**

- Enhancing Research Impacts: NTU will establish five core research areas and implement 20 multinational cooperation projects.
- Strengthening Research Environment and Capacity: By 2028, NTU will establish five international joint R&D centers and 10 international joint laboratories.
- Expanding International Research Reputation: By 2028, NTU will achieve a top 50 ranking in one more broad subject area in QS subject rankings and have at least 44 subjects in the top 100.

### **3. Enhancing Collaboration and Influence within the International Academic Community**

- **Strengthening Collaboration with Key Universities:** NTU will promote international cooperation projects with key universities, providing annual subsidies for 10 international cooperation teams.
- **Promoting International Joint Research:** NTU will increase five multinational cooperative research projects annually, aiming for a 10% increase in international collaborative research publications by 2028.
- **Aligning with Global Higher Education:** NTU will actively participate in major international academic and higher education organizations, holding international higher education forums and workshops annually.

#### **4. Incentivizing Research and Expanding Talent Recruitment and Retention**

- **Talent Recruitment:** NTU will establish a range of university-level chair professorship and scholar fellowship programs to offer at least 15 positions annually to recruit outstanding talents.
- **Talent Retention—Chair Professorships:** NTU will enhance its university-level chair professorships to deliver higher compensation payouts to distinguished faculty members, with at least 60 awarded each year.
- **Talent Retention—Pay Raises:** NTU will refine flexible salary plans to increase faculty salaries, with the goal of 45% of faculty receiving additional pay.

#### **5. Strengthening Industry-Academia Collaboration to Drive Industrial Development**

- **Supporting Innovative Industries:** NTU will annually establish at least five joint centers or alliances with private corporations, create at least two new startups, and incubate over 25 small and medium-sized enterprises.
- **Commercializing Innovative Technologies:** NTU aims for technology transfer amounts to exceed NT\$220 million by 2028.
- **Facilitating Industry-Academia Collaboration:** NTU will increase collaboration projects with legal entities and enterprises, targeting NT\$1.35 billion in revenue by 2028.

#### **6. Promoting In-Depth and Interdisciplinary Learning**

- **Providing Quality Interdisciplinary Learning Environment:** NTU will continue to implement its Future NTU Initiatives, aiming to have established 288

specialization programs and eight university or college interdisciplinary bachelor's programs by 2028.

- **Advancing Innovative Teaching:** NTU will promote innovative immersive teaching methods and enhance students' digital literacy and learning outcomes.
- **Encouraging In-depth Learning:** We will further promote Undergraduate Honors Programs focused on in-depth learning, with a total of 30 programs established by 2028.
- **Cultivating Interdisciplinary Leaders:** We will offer interdisciplinary internship opportunities across various fields, with corporate executives serving as mentors. By 2028, we aim to engage 125 enterprises and receive 700 student applications.

#### **7. Advancing Self-Directed Learning and Research**

- **Promoting Self-Exploration Learning Mechanisms:** NTU is committed to launching 30 projects each year under the Active Learning Project and aims to attain a 40% participation rate in the NTU Challengers program by 2028.
- **Encouraging Undergraduate Research:** NTU aims to achieve an average of 70 applicants annually for the Bachelor's Thesis Award between 2024 and 2028.

#### **8. Strengthening Enrollment Strategies and International Education Linkage**

- **Increasing the Scope of EMI (English as a Medium of Instruction) Courses:** By 2028, NTU will establish 42 all-English degree programs and offer a total of 2,300 English-taught courses university-wide.
- **Attracting Distinguished Graduate Students from Abroad:** NTU will facilitate enrollment with diverse and flexible admission policies and curriculum systems, as well as enhance dual-degree cooperation with the global top 30 universities, adding one to two new cooperation programs annually between 2024 and 2028.
- **Launching NTU Beyond Borders to Expand International Horizon for Students:** NTU will offer scholarships for at least 100 undergraduate students annually to pursue dual degrees or exchange programs at the global top 50 universities.
- **Encouraging Exploratory Learning Overseas:** NTU will facilitate students to participate in international competitions, forums, exchanges, and various forms of extracurricular exploratory learning. Each year, at least 10 student clubs will be guided and supported to participate in international exploration programs.

## **9. Implementing Robust Financial Planning and Fundraising**

- **Strong Fundraising:** Set to achieve an annual average of over NT\$1 billion in large donations (each over NT\$1 million) and secure at least NT\$250 million in total small donations each year.
- **Prudent Investment:** Set to achieve an average annual return of over 4% on investments.

## **10. Embarking on Centennial Projects and Strengthening Alumni Connectedness**

- **Strengthening Alumni Connectedness:** NTU will establish new alumni communication groups and build an alumni exchange hub at the New Moon Pavilion.
- **Building Centennial Architecture:** NTU will complete the Centennial Memorial Hall by 2028, showcasing the Top 100 NTU Contributions, as well as artistic works and collections.
- **Publishing Centennial Achievements:** Between 2025 and 2028, NTU will release three special publications to commemorate its centennial: *Top 100 NTU Contributions*, *The Scripts of National Taiwan University History 1928-2028*, and the *National Taiwan University 100<sup>th</sup> Anniversary Special Edition*.
- **Holding Centennial Events:** NTU will celebrate the centennial anniversary by hosting a higher education forum and 10 centennial academic symposiums, spreading jubilation to the global academic community.