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Taiwan’s First Dual-Degree Program in Defense and Technology: Four Key Pillars for Cultivating Experts



Established in 2019, the Undergraduate Degree Program of Systems Engineering and Technology is tailored for students passionate about defense technology research, development, maintenance, and application.

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As global geopolitical tensions continue to evolve, the demand for high-tech talent in the defense sector is rising. In response, National Yang Ming Chiao Tung University (NYCU) and the National Defense University (NDU) have jointly launched Taiwan’s first dual-degree system in defense and engineering—the Undergraduate Degree Program of Systems Engineering and Technology.

Designed to cultivate professionals with expertise as scientists, engineers, and military officers, the program has already produced two cohorts of graduates. More than just an academic collaboration, it represents a groundbreaking partnership between Taiwan’s Ministry of Education and the Ministry of National Defense, setting a new precedent for defense and higher education cooperation.

Key 1: Integrating Engineering and Military Training

Enrollees receive rigorous academic training at NYCU while undergoing comprehensive military education at NDU’s Chung Cheng College of Technology. This dual-track approach ensures that graduates are technically proficient and equipped with the leadership skills necessary for military and defense-related roles.

Unlike conventional dual-degree programs, which typically involve international university partnerships, this initiative is the first domestic collaboration between two Taiwanese universities. Students completing 128 credits earn bachelor’s degrees from NYCU and NDU. The innovative structure streamlines academic requirements and enhances educational quality through co-taught courses, shared laboratory resources, and cross-campus faculty collaboration.

Key 2: Advancing National Defense Through Cutting-Edge Technologies



The Undergraduate Degree Program in Systems Engineering and Technology offers an interdisciplinary curriculum spanning semiconductors, AI, unmanned systems, cybersecurity, and space technology.

The program is structured into six specialized academic tracks:

- Electrical and Electronic Engineering
- Computer Science and Engineering
- Mechanical and Aerospace Engineering
- Power and Systems Engineering
- Environmental Information and Engineering
- Chemical and Materials Engineering

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By integrating systems thinking, software and hardware design, data analysis, and project management, the program equips students with the comprehensive skill set needed to tackle complex challenges. Whether in technology, environmental solutions, or engineering innovation, graduates emerge with a strong foundation to meet future demands.

Key 3: Leveraging a Powerful Dual Alumni Network

Beyond academics, the dual-degree program provides access to two robust alumni networks. NYCU alumni hold influential positions in Taiwan’s technology sector, while NDU alumni play critical roles in military research and defense strategy. This dynamic synergy creates extensive career opportunities for graduates, whether they choose to serve in the military or transition into private-sector industries.

Key 4: Strengthening Taiwan’s Defense Self-Reliance



The program introduces various defense-related professional tools and technologies covering software and hardware skills.

The program directly aligns with Taiwan’s strategic push for defense self-reliance. As modern warfare and military-industrial development become increasingly complex, graduates must possess both technical expertise and the ability to bridge communication between the defense sector and the technology industry. Equally skilled as scientists, engineers, and officers, these future leaders will be crucial in shaping Taiwan’s next-generation defense capabilities.

Looking ahead, NYCU remains committed to integrating cutting-edge technology, education, and defense expertise to drive Taiwan’s defense and aerospace industries toward greater self-sufficiency. This pioneering dual-degree initiative redefines higher education’s role in national security talent development and reinforces Taiwan’s determination to secure its leadership in critical technology sectors.

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