

Redefining Higher Education Curricula: A Modular Approach to Second Specialty Acquisition

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Abstract:

NYCU established its pioneering interdisciplinary programs (NYCUX) in 2016, empowering students to cultivate a second specialty and adapt to dynamic industrial trends without extending their studies. As of late 2025, the university offers 45 diverse program modules spanning key fields like engineering, science, management, and humanities. The curriculum deftly balances the primary major with the second specialty: it requires 28-32 credits for the interdisciplinary program while adjusting original major requirements to approximately 70 credits, maintaining the graduation threshold at 128 credits. Notable initiatives include the "Three-in-One Program," bridging scientific and engineering disciplines, and the "Interdisciplinary Design and Innovation Technology Program," which integrates design thinking with technology. Successful completion is formally recognized and noted on the student's diploma.

Supplementing this, NYCU introduced "micro-programs" (uNYCU) in 2023 to further enhance flexibility. These compact 8-to-12 credit modules enable students to systematically build interdisciplinary competencies and "design their own learning paths". The portfolio is diverse, ranging from "Exploratory" courses for foundational knowledge to "Advanced" modules and "Practical" workshops for hands-on experience. Enrolment is open without prior application, provided students complete at least four credits outside their existing major. Upon finishing, students can apply for a certificate validating their expanded skill set before graduation. In this presentation, we will showcase these strategic designs and our ongoing efforts since 2016.

Keywords:

Interdisciplinary Education, micro-programs, Second Specialty, Flexible Learning Pathways, Modular Curriculum.