

National Taiwan University of Science and Technology
Department of Mechanical Engineering
Regulations Governing the AI Human-Robot Collaboration Credit Program

Approved by the Department of Mechanical Engineering Curriculum Committee on April 30, 2026

Approved at the 426th Department Affairs Meeting of the Department of Mechanical Engineering on May 8, 2026

1. Purpose: To meet Taiwan's demand for professionals in the AI human-robot collaboration industry, and in response to the planning of the Ministry of Education's Practical Training Field Equipment Enhancement Project - Teaching and Practical Training Field Development Program - Taiwan Tech Hua-Hsia Campus AI Human-Robot Collaboration Field Equipment Enhancement Project, the AI Human-Robot Collaboration Credit Program is established. The curriculum is designed to cultivate professionals in artificial intelligence, robotics, and human-robot collaboration, to reduce the gap between academic training and industrial practice, to enhance students' professional competence and employability in AI human-robot collaboration, and to provide the industry with more reliable professionals while strengthening industrial competitiveness.
2. Eligibility: Graduate students and undergraduate students in their third year or above from National Taiwan University of Science and Technology, National Taiwan University, and National Taiwan Normal University are eligible to take this program.
3. Enrollment quota: No fixed quota is imposed; however, enrollment remains subject to the capacity limits of individual courses.
4. Application procedure: Students shall apply through the credit program application system within the period specified in the University academic calendar.
5. Courses offered by NTUST: The program consists of three majors, namely Mechanical Engineering, Electronics, and Industrial Management. At least two major courses in each field shall be offered each academic year, as shown in Table 1. In addition, one PBL course shall be offered each academic year, as shown in Table 2.
6. Courses offered by partner universities: Partner universities, including National Taipei University of Technology and Ming Chi University of Technology, offer several courses in the three majors in conjunction with the Taiwan Tech Hua-Hsia Campus AI Human-Robot Collaboration Field Equipment Enhancement Project, as shown in Table 3.
7. Completion requirements: Students shall select one major of study and complete three featured courses and one PBL course in accordance with the following requirements. The minimum total credits required for completion are 12 credits.
 - a. Mechanical Engineering field: Students shall complete at least two featured courses in the major field of Mechanical Engineering (courses offered by partner universities may be counted), and at least one course from the minor fields of Electronics or Industrial Management. Students shall also complete the common-field PBL course.
 - b. Electronics field: Students shall complete at least two featured courses in the major field of Electronics (courses offered by partner universities may be counted), and at least one course from the minor fields of Mechanical Engineering or Industrial Management. Students shall also complete the common-field PBL course.
 - c. Industrial Management field: Students shall complete at least two featured courses in the major field of Industrial Management (courses offered by partner universities may be counted), and at least one course from the minor fields of Mechanical Engineering or Electronics. Students shall also complete the common-field PBL course.
8. Certificate issuance: Students who have completed the required courses and credits of the program and have received passing grades shall, before graduation, complete the application form for the certificate of completion of the credit program and attach a copy of their transcript. The application shall be submitted to the Department of Mechanical Engineering. Upon approval by the AI Human-Robot Collaboration Curriculum Committee, the Department of Mechanical Engineering shall issue the certificate of completion of the credit program.

9. Students taking courses under this program shall complete course selection procedures during the add/drop period of each semester.
10. Credits earned from courses under this program shall be counted toward the minimum total credits required for graduation by each department and shall also be included in the maximum number of credits that may be taken each semester.
11. NTUST students taking courses at partner universities shall comply with the University's regulations governing inter-university course enrollment.
12. Matters not specified in these regulations shall be handled in accordance with the University's academic regulations and relevant rules.
13. These regulations shall take effect after approval by the University Academic Affairs Meeting. The same procedure shall apply to any amendments.

Table 1. Featured Courses of the AI Human-Robot Collaboration Credit Program

Field	Course Title (Course Code)	Offering Department/Institute	Credits
Mechanical Engineering	Robotics (ME5609)	Department of Mechanical Engineering	3
	Optimal Design (ME5209)	Department of Mechanical Engineering	3
	Computer Automatic Control Systems (ME5602)	Department of Mechanical Engineering	3
Electronics	Generative Computer Vision (ET5516)	Department of Electronic and Computer Engineering	3
	Intelligent Visual Inspection (SI5102)	Graduate Institute of Intelligent Manufacturing Technology	3
Industrial Management	Intelligent Operations and Management (IM5806)	Department of Industrial Management	3
	Industrial Safety (IM5712)	Department of Industrial Management	3

Table 2. PBL Course of the AI Human-Robot Collaboration Credit Program

Field	Course Title (Course Code)	Offering Department/Institute	Credits
Common	AI Human-Robot Collaboration and Intelligent Manufacturing (ME5371)	Department of Mechanical Engineering	3

Table 3. Featured Courses Offered by Partner Universities (Credits May Be Counted Toward the NTUST AI Human-Robot Collaboration Credit Program)

Field	Course Title	Offering University and Department/Institute	Credits
Mechanical Engineering	Industrial Control Embedded and Distributed Systems	Department of Mechanical Engineering, National Taipei University of Technology	3
	Industrial Control Database Systems and Information Security	Department of Mechanical Engineering, National Taipei University of Technology	3
Electronics	Edge Computing and Intelligent Machinery	Graduate Institute of Automation Technology, National Taipei University of Technology	3
	Embedded Microprocessor Systems and AI Applications	Department of Electronic Engineering, Ming Chi University of Technology	3
	Autonomous and Federated Learning for Smart Healthcare Data	Department of Electronic Engineering, National Taipei University of Technology	3
Industrial Management	AI-Based Intelligent Decision-Making and Operations Analysis	Artificial Intelligence Program, Ming Chi University of Technology	3
	Facility Planning	Department of Industrial Engineering and Management, Ming Chi University of Technology	3