

KMUTT–SIT Inbound Global Project Based Learning AY2025 Winter in Toyosu

Date	Place	Partner Organization	Students' Major and Grade	Participants' Information	SIT Instructor
2026/02/23 ~2026/03/02	Japan	King Mongkut's University of Technology Thonburi	<ul style="list-style-type: none"> • Department of Engineering Science and Mechanics • Undergraduate 3rd grade, Undergraduate 1st grade, Undergraduate 2nd grade, Undergraduate 4th grade 	(SIT) Students 14, Student Staff 4, Professor 3 (King Mongkut's University of Technology Thonburi) Students 8, Professor 4	NAGASAWA Sumito(Mechanical Engineering Advanced Mechanical Engineering), YOSHIKUBO Hatsuko(Innovative Global Program)



Image1 Cultural Exchange Excursion

This gPBL was implemented as a hosting-type program between Shibaura Institute of Technology and King Mongkut's University of Technology Thonburi (KMUTT). Prior to the program, preparatory learning was conducted through an online lecture by Prof. Ishizaki from the Malaysia Office, with the aim of preparing students for English communication and motivating them for participation in the gPBL. Using small mobile robots as a base kit, each team carried out functional extensions based on their own original concepts. As the main topic of this gPBL, LiDAR sensors were mounted on the mobile robots, and exercises on environmental data measurement and self-localization were conducted. In addition, as part of cultural exchange learning, students visited the Tokyo area as well as the Kamakura and Enoshima areas together with KMUTT students, engaging in English-based interactions while experiencing Japanese history and culture. On the KMUTT side, several students who had participated in the outbound gPBL program held in the summer joined again, leading to continued interaction with SIT students.

In this program, in addition to faculty evaluation of the final group presentations, a comprehensive assessment was conducted that included evaluation of daily communication logs on Slack and each team's wiki pages. This approach enabled evaluation not only of the final presentations but also of students' contributions to group work and their learning attitudes. Furthermore, daily reports and pre- and post-program MGUDS-S surveys, conducted with the cooperation of Prof. Yoshikubo from IGP, were implemented to support students' reflective learning.

As part of this program, ROS implementation and autonomous mapping exercises using LiDAR were introduced as key topics, which were well received by the participants. In addition, collaboration with KMUTT faculty progressed smoothly, and a joint paper by both institutions has been submitted to and accepted at CEES 2026 (The 8th International Conference on Clean Energy and Electrical Systems), with a presentation scheduled for April.



Image2 Group work exercise



Image3 Auto Mapping Using LiDAR

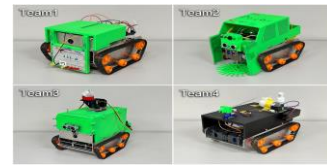


Image4 Each team's enhanced robot