

Design of Technology to Reduce Labor Load in Palm Palm Fruit Harvesting Operations

Date	Place	Partner Organization	Students' Major and Grade	Participants' Information	SIT Instructor
2024/08/28 ~2024/09/06	Malaysia	University Malaysia Sarawak	Department of Bioscience and Engineering, Systems Engineering and Science, Innovative Global Program Undergraduate 2nd grade~4th grade, Master 1st ~2nd grade	(SIT) Students 15, Student Staff 1, Professor 3 (University Malaysia Sarawak) Students 11, Student Staff 3, Professor 6	WATANABE Nobuo (Department of Bioscience & Engineering), SHAHROL BIN MOHAMADDAN (Innovative Global Program), TAKAYAMA Yuzo (Department of Bioscience & Engineering)



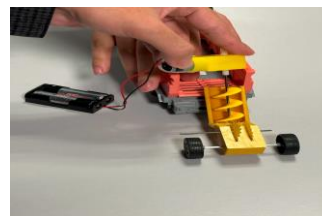
Palm Fruit

A total of 15 students from (13 Bachelor students and 2 Master students) from Shibaura Institute of Technology and 11 students from the Department of Mechanical Engineering, Faculty of Engineering, Universiti Malaysia Sarawak (UNIMAS) joined the gPBL(global project based learning) practical lecture in the campus of (UNIMAS) Malaysia. Japanese and Malaysian Students were mixed and classified into 5 teams, and worked together to design a technology to reduce the burden of palm palm palm harvesting in the state of Sarawak, Malaysia. They worked on the design of technology to reduce the burden on workers in palm palm harvesting in Sarawak, Malaysia. They visited local palm palm fields, understood the issues faced by local workers, brainstormed ideas for each group, then materialized their design proposals using 3D CAD, and introduced and discussed their ideas through interim presentations. The participants then set goals to be achieved in the second half of the project period through the introduction and discussion of their design ideas using 3D CAD. In the latter half of the period, the participants worked on the construction of the device by prototyping parts and assembling prototypes using 3DPrinter. After 8 days of work, the final presentation was held and each group presented the results of their work.

As summary, at UNIMAS University in Sarawak, Malaysia, SIT and UNIMAS students collaboratively brainstormed with group members to solve local problems, designed solutions, embodied the solutions using 3D CAD and 3DPrinter, conducted simulations, and gave interim and final presentations. And, they successfully gained a great sense of accomplishment from the experience of working as a team to create products in an international environment, and learned the necessary qualities for engineers who will be active in a global society.



Prototyped design 1



rototyped design 2



View at Midterm presentation



View at Final Presentation