芝浦工業大學 SHIBAURA INSTITUTE OF TECHNOLOGY

AY2021Global PBL (Online) Performance Report

Cross-cultural Engineering Project@FCT/UNL

Date	Place	Partner Organization	Students' Major and Grade	Participants' Information	SIT Instructor
2021/07/27 ～2021/08/05	Portugal	Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa (Non-partner University)University of Navarra Tecnun King Mongkut's University of Technology Thonburi Suranaree University of Technology Institut Teknologi Sepuluh Nopember UCSI University Malaysia-Japan International Institute of Technology	・Systems Engineering and Science、Global Course of Engineering and Science、Department of Machinery and Control Systems、Department of Electronic Information Systems、Department of Bioscience and Engineering、Department of Planning, Architecture and Environmental Systems、 ・Undergraduate 4th grade、Master 1st grade	(SIT) Students 16, TA 4, Professor 3, Staff 1 (Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa) Students 8, Alumni 1, TA 3, Professor 1 (Non-partner University) University of Navarra Tecnun Students 2 (King Mongkut's University of Technology Thonburi) Students 5, Professor 1 (Suranaree University of Technology) Students 3, Professor 1 (Institut Teknologi Sepuluh Nopember) Students 6 (UCSI University) Students 6 (Malaysia-Japan International Institute of Technology) Students 3	ICHIKAWA Manabu (Department of Architecture and Environment Systems) WATANABE Dai (Department of Machinery and Control Systems) HASEGAWA Hiroshi (Department of Machinery and Control Systems)

Image1 Living Shift Project

CEP@FCT/UNL—the CEP has been held at three sites around the world—was conducted as a cyber-physical PBL. Its participant becomes 50 students from Portugal, Spain, Thailand, Malaysia, Indonesia and Japan, and two participants from Japanese company as a supervisor. CEP@FCT/UNL is a PBL with the theme of innovation creation, and which consists of a design process and a prototyping process. In the design process, the design specification is defined through the contradiction solving using the QFD matrix. Its matrix is created by the deployment among the required quality from the objectives and needs, the Kando quality through the Kando understanding process and initial solutions. In the prototyping process, we decided to use a business model as the outcome, since it will be web-based PBL again this year. In order to make the business model attractive, the Learn Canvas was introduced. In addition, CEP introduced oVice to enable real-time idle-talk and movement within the space, and used Google Classroom to distribute, post, and submit materials. By constructing such an environment, CEP has prepared a cyber-physical PBL space that mixes real and virtual environments. Next, CEP conducted three projects related to the conclusion of the cooperation agreement between Nasu-Town and SIT: Living Shift, Recommendation System, and Shiobara-Onsen Service in Nasu-Shiobara as workation tasks, and five other free projects, for a total of eight tasks as projects. In the first half of the CEP, was carried out in a workation environment, many groups were able to communicate well within the group. However, in the latter half of the prototype process (the business model creation), many of the groups were connected to oVice individually and worked on their own. Therefore, Group activity's positive level been seemed to lower. As described above, CEP@FCT/UNL ended with a favorable response, because of the introduction of new initiatives such as oVice for allowing real-time idle talk and movement within the space, the introduction of Lean Canvas for business model creation, and the combination of ice breaking and OMG experience (improvisation education).

Image2 Design review in oVice

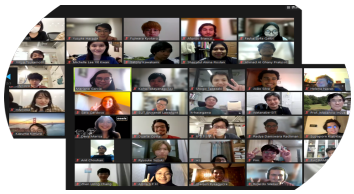

Image3 Group photo

Image4 OMG experience