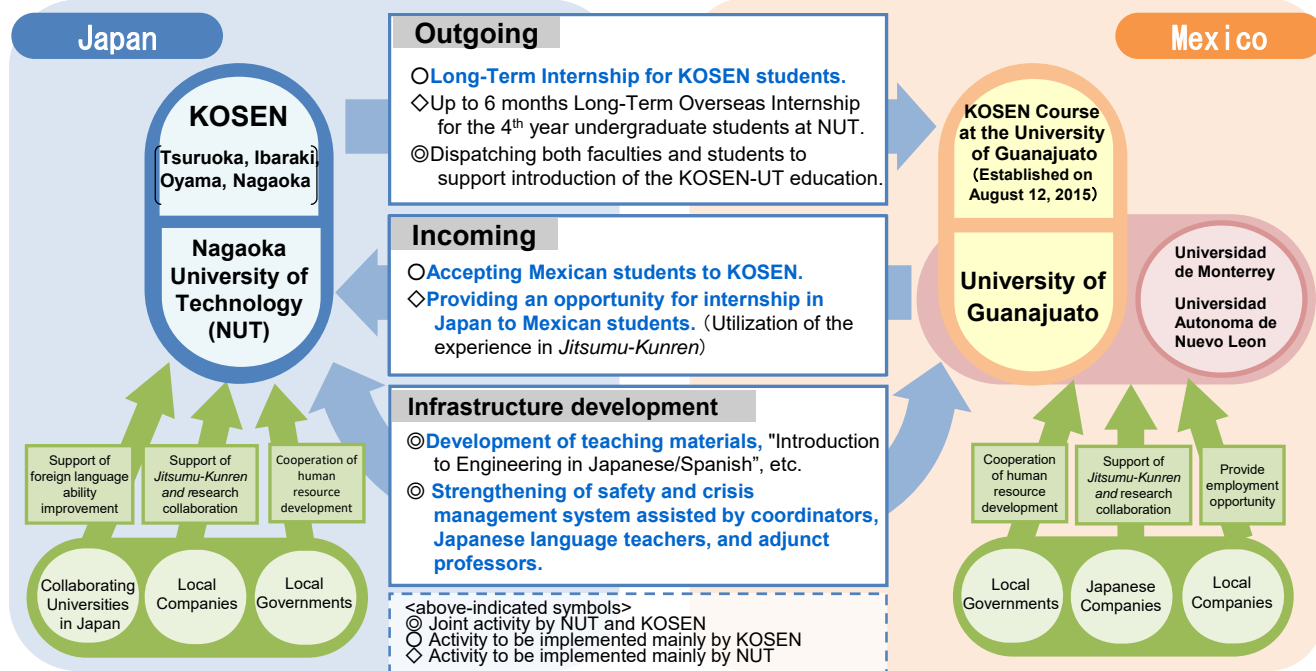【Project Title】(Project selected for FY2015, Region: Latin America)

『**Globalization of Engineering Education Model Starting from Age Fifteen: A Collaborative Program with Mexico, NAFTA Manufacturing Hub**』

【Outline of the Project】

This project is aimed to establish KOSEN-University of Technology (UT) Engineering Education Model and deepen it to the bilateral exchange model in gradual and continuous exchange of both Japanese and Mexican students as global collaborative engineering education through the collaboration with Mexican universities and organizations based on Japanese College of Technology (KOSEN) model.

【Outline of Exchange Program】

① Japan to Mexico: Long-Term Internship for KOSEN students and *Jitsumu-Kunren* for the 4th year undergraduate students.
② Mexico to Japan: Study Abroad and Internship from KOSEN.
③ Enhancing Twinning Programs and Double Degree Programs with Mexican Universities.
④ Development of educational method and teaching materials for the foundation of KOSEN-UT Engineer Collaborative Education Model.

(Note)
Jitsumu-Kunren is the long–term internship system (approx. 6 months) based on the Practical Engineer Development Program, developed by the collaboration between NUT and accepting organizations.

【Type of Human Resource Trained by the Project】

In this Project, KOSEN and NUT will nurture leading and practical engineers capable of research development for resolution of the issues through the opportunities and experiences in study abroad and interaction between Japanese and Mexican students in the same generation, as well as gaining the firsthand knowledge, understanding of diverse values and recognition of the importance to resolute the issues on a global scale.

【Characteristic of the Project】

This project will enable to expand KOSEN-UT Engineering Education Model to become a transferable engineering education model with characteristics of educational methodology and supporting education tools (such as technical materials, Japanese learning materials, dealing with multilingual environment).

【Number of Prospective Exchange Students】

	FY2015								FY2016								FY2017							
	A	Bo	Br	Ch	Co	M	Pa	Pe	A	Bo	Br	Ch	Co	M	Pa	Pe	A	Bo	Br	Ch	Co	M	Pa	Pe
Outgoing Students						17								24								25		
Incoming Students						0								20								25		

	FY2018								FY2019							
	A	Bo	Br	Ch	Co	M	Pa	Pe	A	Bo	Br	Ch	Co	M	Pa	Pe
Outgoing Students						24								25		
Incoming Student						26								25		

A：Argentina Bo：Bolivia Br：Brazil Ch：Chile Co：Columbia M：Mexico Pa：Panama Pe：Peru

1．FY 2015 Progress

【Name of Project】(Project selected for FY2015, Region: Latin America)
「**Globalization of Engineering Education Model Starting from Age Fifteen: A Collaborative Program with Mexico, NAFTA Manufacturing Hub**」

■ Exchange Programs

〈TA by Japanese students in Mexico 〉

In FY 2015, we dispatched Japanese students including KOSEN students to Mexico and discussed and collected information to enhance Twinning Program and Double Degree Program. Also, we developed multilingual teaching materials for the foundation of KOSEN-UT Engineer Collaborative Education Model, and established safety and crisis management system.
Through these efforts, we established the foundation to promote this project.

Student-Mobility

○ **Outgoing**

In FY 2015, as *Jitsumu-Kunren*, we dispatched 4 students for 6 months to universities and local companies in Mexico.
For the support of KOSEN Course at the University of Guanajuato, <u>16 KOSEN students were dispatched to involve in cross-cultural exchange.</u>
Also, for interaction with Twinning Program students at Universidad Autonoma de Nuevo Leon, <u>8 NUT and KOSEN Students were dispatched and practiced as TA.</u>

○ **Incoming**

There were some incoming exchange in FY 2015. We will put more effort into the incoming program from next year.

	FY2015															
	Plan								Result							
	A	Bo	Br	Ch	Co	M	Pa	Pe	A	Bo	Br	Ch	Co	M	Pa	Pe
Outgoing Students						17								28		
Incoming Students						0								7		

A：Argentina Bo：Bolivia Br：Brazil Ch：Chile Co：Columbia M：Mexico Pa：Panama Pe：Peru

■ Forming the University Network with Quality Assurance

〈Interaction with KOSEN students and students in Mexico〉

We involved in interactive faculty exchange among University of Guanajuato, Universidad de Monterrey, and Universidad Autonoma de Nuevo Leon.
We also discussed to enhance credit transfer system, Twining Program and Double Degree Program.

■ Promotion of Student-Mobility Environment

We held a project steering committee and shared the information of safety and crisis management system.
We gave the students pre-departure guidance to shared information about the local circumstance in order to reduce the risks during the stay.
In addition, for using Japanese engineering textbooks as supplementary materials for students in Mexico, we translated the textbooks into Spanish, and started Japanese-English-Spanish trilingual support.

■ Internationalization of the university
Information disclosure and Publication of outcome

Started creating website and brusquer that dealing with Japanese, English, and Spanish

■ Notices

For KOSEN students, this dispatch to Mexico was first time going abroad for many of them, and they could improve their global communication skills and motivation to study abroad in the future by the cross-cultural experience.
For the students in Mexico, they came into contact with part of Japanese education system through communication with KOSEN students and improved the motivation to study in Japan.
NUT students visited companies in Mexico and inquired the difference from Japanese companies and manufacturing.

2. FY 2016 Progress

【Name of Project】(Adopted year:FY2015, Region: Latin America)
「Globalization of Engineering Education Model Starting from Age Fifteen: A Collaborative Program with Mexico, NAFTA Manufacturing Hub」

■ Exchange Programs

〈TA by Japanese students in Mexico 〉

In FY 2016, we dispatched Japanese students including KOSEN students to Mexico and discussed and collected information to enhance Twinning Program and Double Degree Program. Also, we developed multilingual teaching materials for the foundation of KOSEN-UT Engineer Collaborative Education Model, and established safety and crisis management system.
Through these efforts, we established the foundation to promote this project.

Student-Mobility

○ Outgoing

In FY 2016, as *Jitsumu-Kunren*, we dispatched 4 undergraduate students to the University of Guanajuato, 1 undergraduate student to University of Monterrey for 6 months. Also, we assisted in intensive courses and took a part in cross-cultural understanding and exchange as Short-Term Program, we dispatched 4 postgraduate students and 9 undergraduate students to Universidad Autonoma de Nuevo Leon and University of Monterrey.
To support KOSEN Course at the University of Guanajuato, 13 KOSEN students from Japan were dispatched to interact with the local students as a part of cross-culture exchange. Moreover, we dispatched 4 KOSEN students from Japan to the University of Guanajuato where they engaged in their research projects at local institutes and the University and assisted as a TA.

○ Incoming

	FY2016															
	Plan								Result							
	A	Bo	Br	Ch	Co	M	Pa	Pe	A	Bo	Br	Ch	Co	M	Pa	Pe
Outgoing Students						24								35		
Incoming Students						20								27		

A：Argentina Bo：Bolivia Br：Brazil Ch：Chile Co：Columbia M：Mexico Pa：Panama Pe：Peru

■ Forming the University Network with Quality Assurance

We involved in interactive faculty exchange among University of Guanajuato, Universidad de Monterrey, and Universidad Autonoma de Nuevo Leon.
We also discussed to enhance credit transfer system, Twining Program and Double Degree Program.

〈Interaction with KOSEN students and students in Mexico〉

■ Promotion of Student-Mobility Environment

We held a project steering committee and shared the information of safety and crisis management system.
We gave the students pre-departure guidance to shared information about the local circumstance in order to reduce the risks during the stay.
In addition, to use Japanese engineering textbooks as supplementary materials for students in Mexico, we translated the textbooks into Spanish, and continued Japanese-English-Spanish trilingual support.

■ Internationalization of the university
Information disclosure and Publication of outcome

Continued to create website and brochures which introduces this project in Japanese, English, and Spanish.

■ Notices

• For many of the KOSEN students, this dispatch to Mexico was their first time going abroad. They were able to improve their global communication skills and increase motivation to study abroad in the future through the cross-cultural experience.
• We dispatched 5 undergraduate students to Mexico for 6 months as overseas *Jitsumu-Kunren* (Long-term internship).
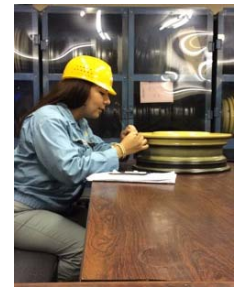
3. FY2017 Progress

【Project Name】(Adopted Year: FY2015, Region: Latin America)

Globalization of Engineering Education Model Starting from Age Fifteen: A Collaborative Program with Mexico, NAFTA Manufacturing Hub

■ Exchange Programs

・In FY2017, we maintained and enhanced this project, dispatched Japanese students (including KOSEN students) to Mexico, and worked to increase our intake of Mexican students in the Twinning Programs and Double Degree Programs. Under the particular, the establishment of a tripartite internship agreement between the 3 Mexican universities and Japanese companies has increased the sustainability of these internships as companies provide local students with financial support for travel and living expenses.
・Focusing on the start of the latter half of the KOSEN Course at the University of Guanajuato, the academic staff on both sides exchanged information on curriculum development, and discussed the organization of specialized subjects and Japanese language education.

〈 A Mexican student in the internship program at a Japanese company 〉

Student Mobility

○ Outbound

・As part of the overseas *Jitsumu-Kunren* internship program, we dispatched 3 undergraduate students to 2 Mexican universities for 6 months. We also dispatched 3 undergraduate students to the Universidad Autonoma de Nuevo León as part of the short-term dispatch program, where they assisted in intensive lectures for Mexican students and participated in cross-cultural exchanges. Under the newly established medium-term dispatch program, we also sent 10 undergraduate students to the University of Monterrey to undergo language training in English and Spanish, as well as to participate in workshops with local students.
・A total of 20 KOSEN students were dispatched to support the KOSEN Course at the University of Guanajuato, where they also participated in cross-cultural exchanges with local students. In addition, 4 students from the KOSEN advanced course were dispatched to the University of Guanajuato to engage in research at local companies and the university, as well as to fulfill teaching assistant duties.

○ Inbound

・ We accepted a total of 27 students, comprising 5 internship students (including 1 as part of the tripartite internship agreement),11 students in the KOSEN Course at the University of Guanajuato, and the remaining students as part of Twinning Programs and Double Degree Programs.

	2017															
	Plan								Results							
	A	Bo	Br	Ch	Co	M	Pa	Pe	A	Bo	Br	Ch	Co	M	Pa	Pe
Outbound						24								40		
Inbound						25								27		

■ Forming the University Network with Quality Assurance

・ With the aim of expanding internships in Japan for Mexican students, we improved the grading methods for credit acquisition, and a tripartite internship agreement was formed between the 3 Mexican universities and Japanese companies in June 2017.
・ In the short-term dispatch program for KOSEN students, academic staff planned the program content and accreditation system. We are working to ensure a high level of quality by examining the responses to students' problems.

〈 Interactions between Japanese and Mexican KOSEN students 〉

■ Promotion of the Student Mobility Environment

・ A steering committee was set up together with the 4 partner KOSEN colleges, and an information sharing system was designed and implemented for safety management and crisis management. In addition, all students underwent a pre-dispatch guidance session to brief them on the current safety issues in Mexico in order to reduce the risks during their travels.
・ To provide Mexican students with our engineering-focused Japanese language textbooks as support teaching materials, a Spanish version is being developed. Accordingly, these textbooks will be available in Japanese, English, and Spanish.

■ Internationalization of the University, Information Disclosure, and Publication of Outcomes

・ A seminar for this program was held at the University of Guanajuato, which was attended by the Deputy Consul General of the Consulate-General of Japan in León, representatives of Japanese companies in Mexico, local teachers, and students in the KOSEN Course at the University of Guanajuato. This seminar presented an overview of the program, its initiatives, and its achievements and results thus far. Following these presentations, an exchange of ideas and opinions among the participants enabled further planning for expanding the program's scope and facilitating interactions with the students and companies.

■ Notices

・ For many of the KOSEN students, their dispatch to Mexico was their first time abroad. Through this cross-cultural experience, they were able to improve their global communication skills and increase their motivation to study overseas in the future.
・ In the medium-term dispatch of NUT students to Mexico, the students participated in various activities, including language training. Based on a post-implementation survey, the students rated this program highly as they experienced an improvement in their language abilities, and also reported a higher motivation for studying overseas and experiencing life abroad.