

International internship program to foreign industrial companies by Nagaoka University of Technology

Masato AKETAGAWA^{#1}

[#] Department of Mechanical Engineering, Nagaoka University of Technology
1603-1 Kamitomioka, Nagaoka, Niigata, 940-2188 JAPAN
¹masatoaa@vos.nagaokaut.ac.jp

Abstract—Nagaoka University of Technology, one of Japanese National Universities, has launched the long term internship program (Jitsumu-Kunren) for 34 years. In this paper, outline of the university and the long term internship program are introduced, respectively.

Keywords— Practical engineering education, Internship program, Internship, International internship

I. OUTLINE OF NAGAOKA UNIVERSITY OF TECHNOLOGY

Nagaoka University of Technology [1], one of Japanese National Universities, was officially opened on 1st October 1976. The university is located at Nagaoka-city, Niigata-prefecture, Japan. Nagaoka is north place and 250 km (1.5 hour trip by Shinkansen) far from Tokyo (**Figure 1**). The number of students and professors are 2,200 and 250, respectively. Half of the students are in graduate school.

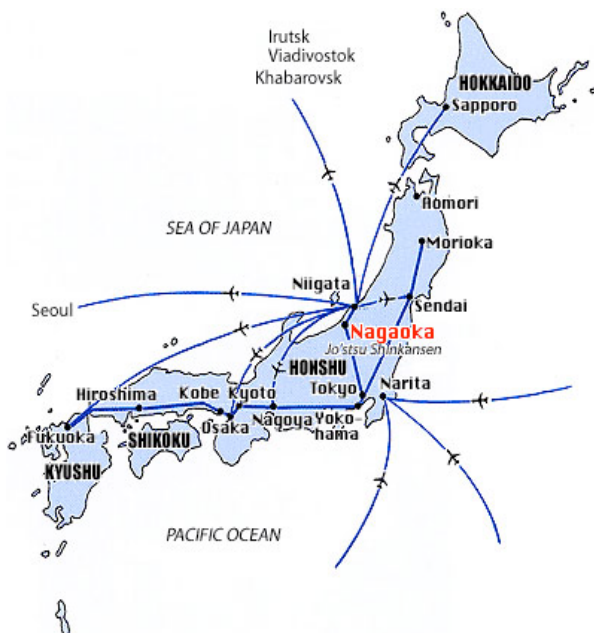


Figure 1. Location of Nagaoka in Japan

Main purpose of opening was to accept graduates of Colleges of Technology (Kosens) [2] as 3rd year students, and to give higher engineering education (~undergraduate + graduate level) to them. The university also accept graduates form General High Schools as 1st year students. The university also accept international students in the twining programs [3] as 3rd year students. Therefore, undergraduate

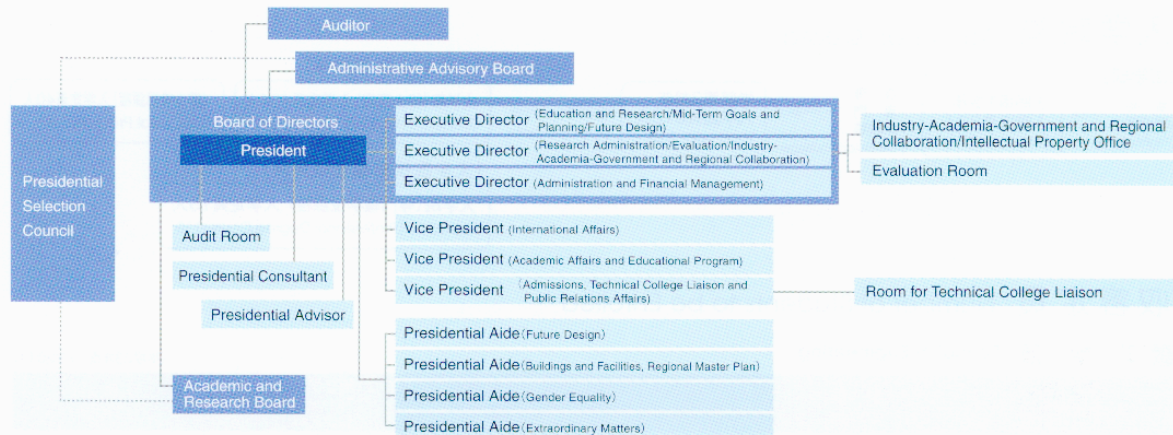
students can be divided into three potions, first is form Kosen (~80%), second is from General High School (~18%) and third is from the twining programs (~2%). Main Objectives of the university is to give practical exercises for science and engineering fields, and to promote creative research activities between industries. The university guiding concept for both learning and research is to encourage originality hand in hand with practical skills, knowledge, and experiences.

The number of students to be enrolled at master program in the university is almost same as that of undergraduate degree. That means the university provides the integrated curriculum that can unify the undergraduate and master degree educations. The master programs aim to train the students who will become leaders in the engineering and science fields, and who will be capable of successfully addressing the needs of social problems. **Figure 2** shows the flowchart of the university educational system.

The university has the School of Engineering, the Graduate School and the Graduate School of Management of Technology as shown in **figure 3**. The School of Engineering (undergraduate) consists of 7 departments. They are (1) Mechanical Engineering, Electrical, (2) Electronics and Information Engineering, (3) Materials Science and Technology, (4) Civil Engineering, (5) Environment Systems Engineering, (6) Bioengineering and (7) Management and Information System Engineering. Each departments in the School of Engineering have same departments in Master programs. On the other hand, in Doctoral Program, the departments in the School of Engineering are mixed, and there are 4 departments, (1) Information Science and Control Engineering, (2) Material Science, (3) Energy and Environment Science and (4) Integrated Bioscience and Technology. In the Graduate School of Management of Technology, there is only System Safety department for master degree.

The university has many MOU between foreign partner universities and institutes [4]. There are 85 partner universities and institutes (58@Asia, 10@Europe, 15@North&South America and 2@Oceania). The university also accepts many foreign students from many countries. In 2011, there are 292 foreign students study at the university. This population is approximately 12% of the total students number. From Thailand, 30 students study at the university. This number is 4th biggest population.

Administrative Organization of National University Corporation Nagaoka University of Technology



Organization of Nagaoka University of Technology

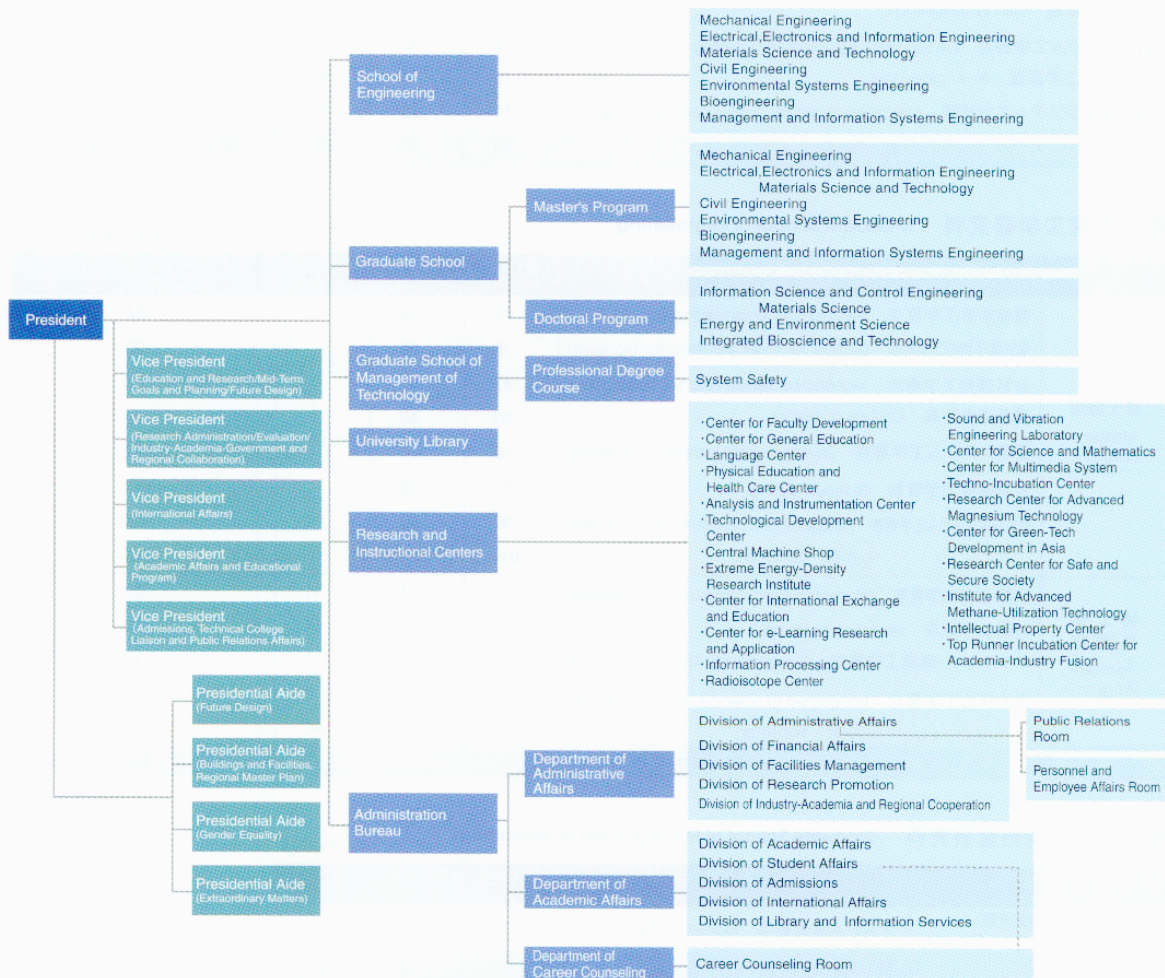


Figure 2. Organization of Nagaoka University of Technology

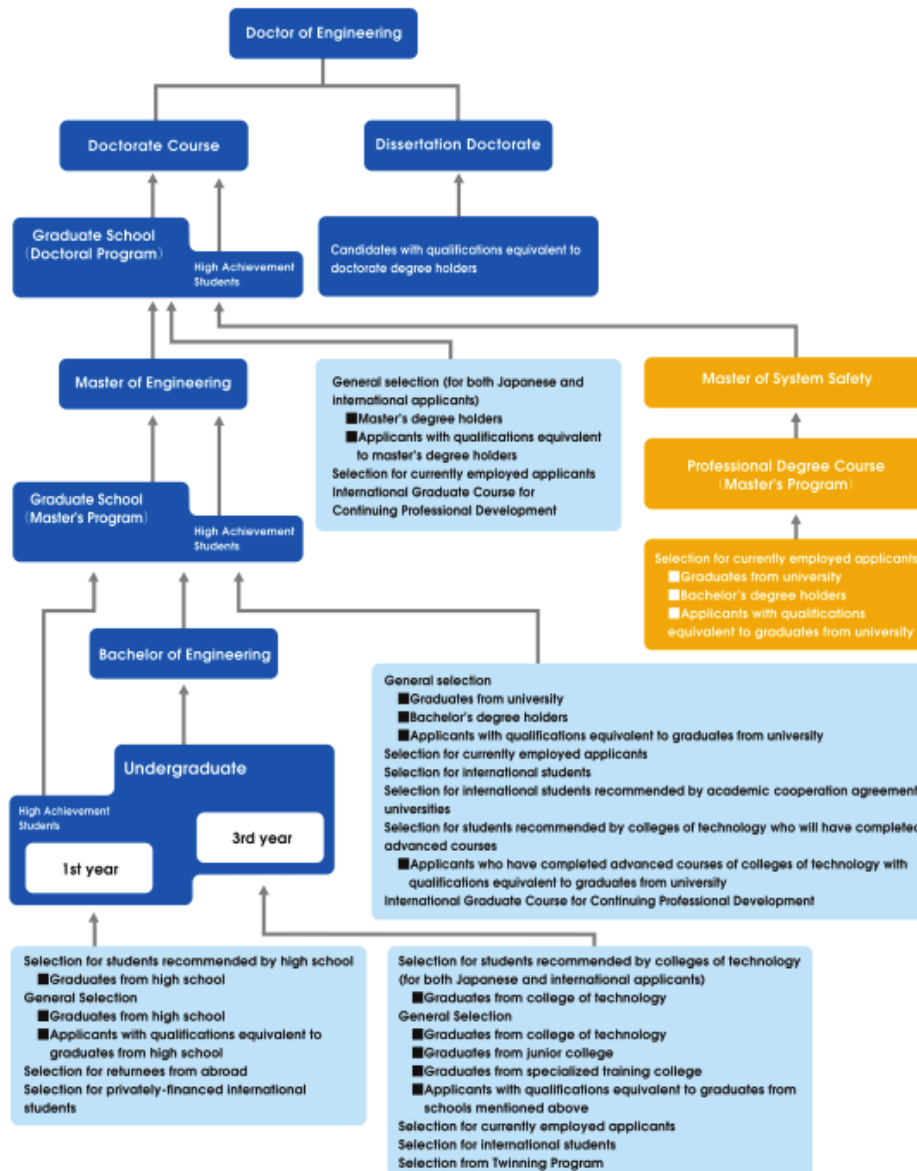


Figure 3. Education system of Nagaoka University of Technology

II. JTSUMU KUNREN (LONG TERM INTERNSHIP)

A. Outline and Purpose

Nagaoka University of Technology has launched the long term internship program (Jitsumu-Kunren) [5] for 32 years. The university requires fourth-year bachelor students, who will entrance to the master degree in the university, to participate in the internships in industrial companies, government agencies or public entities to recognize the needs of society in the field of engineering and science as shown in **figure 4**. The internship develops practical experience, originality and an understanding of the significance of learning for students. Fourth-year bachelor students, who will entrance to the master degree in the university, are required to

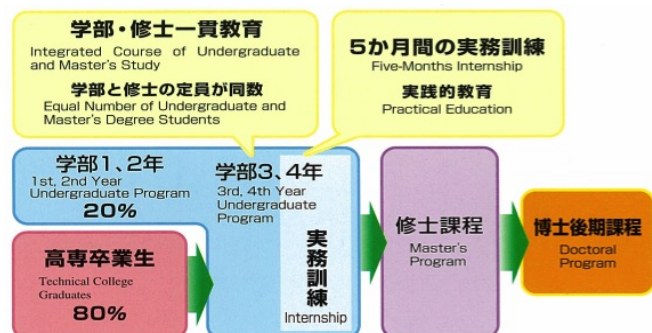


Figure 4. Relationship between the education system and Jitsumu-Kunren

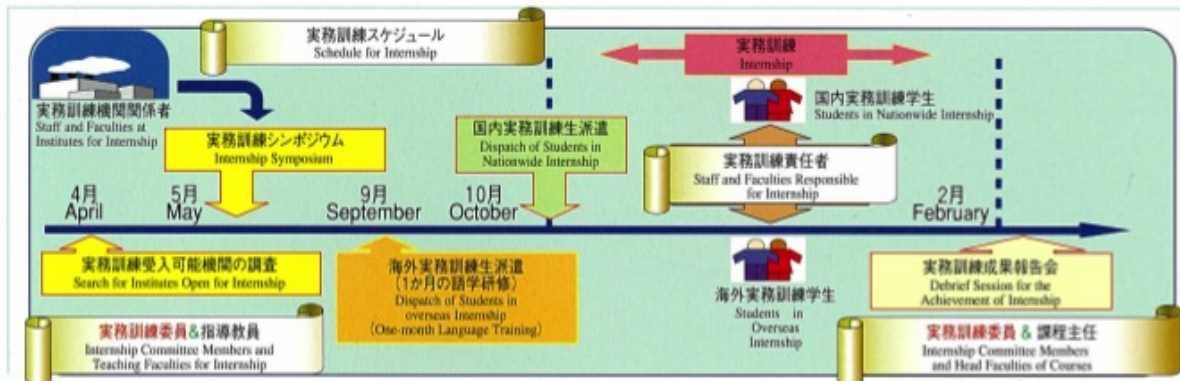


Figure 5. Annual schedule of Jitsumu-Kunren

実務訓練受入機関 (平成22年度 FY2010) Institutes of Internship (Jitsumu-Kunren)

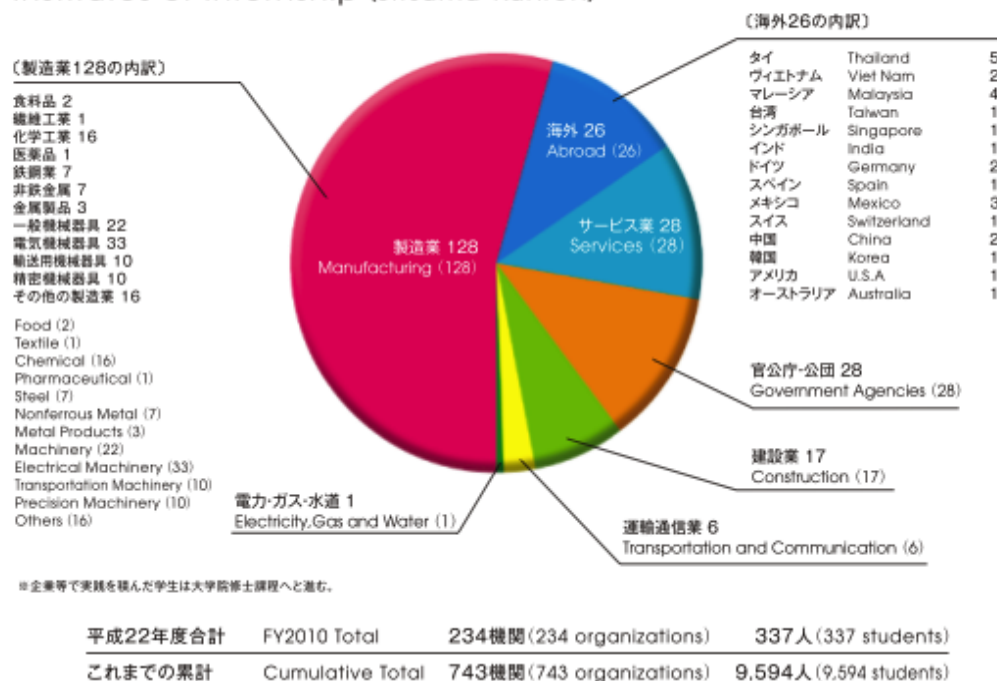


Figure 6. Companies and organizations of Jitsumu-Kunren in 2010

spend up to five months working in industrial companies and organizations. Figure 5 shows examples of Internship Program Schedule. For normal domestic (Japanese industries or organizations) internship, the program starts from beginning of October. The students enrolled in the program spend their times for practical training in engineering or development departments in industries and organizations. The program ends at end of February. This experience enhances the motivation to perform research topics in the master degree. From 1979 to the current time, over 9,600 students have been accepted as the internship students at over 740 companies as shown in figure 6. 70 overseas companies (US, Canada, Germany, Thailand, Korea, Vietnam, etc.) have been accepted the students in the internship program from

1990. Figure 6 also shows internship companies or organizations in 2010.

Internship companies or organizations must be found out by the university professors. In general, one professor has 3~4 companies or organizations for the internship programs.

B. International Internship (Oversee Jitsumukunren)

For overseas (companies or organizations) internship, the program starts from September. In September, students enrolled in overseas internship must take the one-month language training at the partner universities. From October, the students start to work at the internship companies or organizations. In Thailand, 5 partner universities, Thai-Nichi institute of Technology, Thammasat University, Khon Kaen University, Rajamangala University of Technology, Bangkok

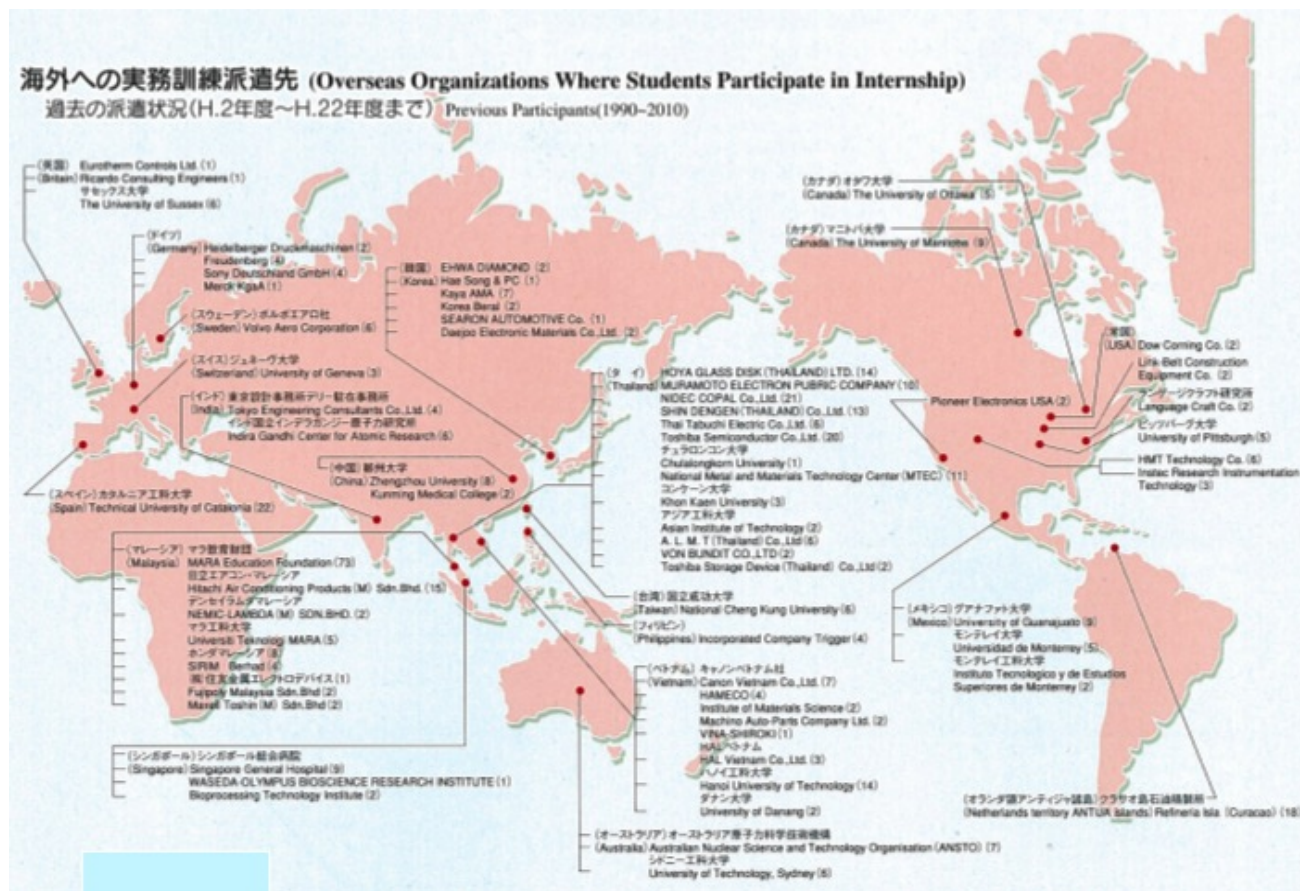


Figure 7. Overseas Jitsumu-Kunren

III. CONCLUSIONS

University, accept Nagaoka students as special auditing students and internship students. **Figure 7** shows overseas companies or organizations which accept Nagaoka students from 1990.

C. Thai office of Nagaoka University of Technology

Nagaoka University of Technology has opened Thai office at Rangsit campus of Thammasat University from April, 2014. The aims of the office are as follows.

- (1) Extension of international internship companies in ASEAN (especially Thailand) area for Nagaoka University of Technology. This extension is for both Toyohashi University of Technology (Sister university) and National Colleges of Technology (Kosens).
- (2) Building of strong collaboration activities between Thai industries and Nagaoka University of Technology.
- (3) Building of strong collaboration activities between Thai universities and Nagaoka University of Technology.

Nagaoka University of Technology, one of Japanese National Universities, has launched the long term internship program (Jitsumu-Kunren) for 34 years. In this paper, outline of the university and the long term internship program are introduced, respectively.

ACKNOWLEDGMENT

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- [4] <http://voice.nagaokaut.ac.jp/international/international-collaborations.html>.
- [5] <http://voice.nagaokaut.ac.jp/about-us/distinctive-features/internship.html>.