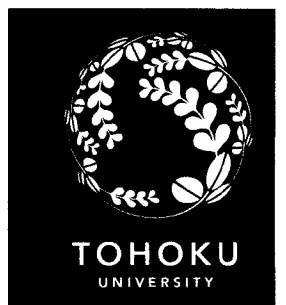




Aobayama Campus Graduate School of Engineering

TOHOKU UNIVERSITY
JUNIOR YEAR PROGRAM
IN ENGLISH
—*Science, Engineering & Agricultural Science*—
2012-2013



I

INTRODUCTION

The main purpose of this program is to offer an opportunity for overseas students to take science, engineering, and agricultural science courses at Tohoku University, without having to attain the Japanese language proficiency that would be necessary to take the same courses in Japanese. All lectures are given in English and course credits will be given by the standards for the equivalent courses offered in Japanese.

The core (required) course of this program is the Individual Research Training course, where students will research, with the support of research groups to which the students are assigned, in a current topic that is related to their field of studies.

The program also offers courses on Japanese language, culture, and society aimed at promotion of understanding of Japan's language and social customs. Cultural and intellectual exchange with Japanese students is an integral part of the program. This will be accomplished through class work as well as participation in the various activities of research groups.

The one-year program begins on October 1, 2012. Approximately 30 students will be admitted.

Applicants are recommended to take the one-year course, because some classes are designed for a whole year. However, a few students can be admitted to the 6-month course if they wish.



Graduate School of Science



Graduate School of Agricultural Science

Graduate School of Engineering



Each semester consists of 15 weeks of class work. Two credits are given for most of the lecture courses that meet once a week for 90 minutes. The Japanese language classes meet four times a week and 4 credits are given for 60 classes. Participation in the activities of a research group counts 5 credits for the Individual Research Training course each semester, which is a required course. Students are required to take a total of 13 credits or more including 5 credits from their faculty's Individual Research Training course each semester.

1. Academic Calendar

Fall Semester (Oct. 2012- Mar. 2013)

Opening Ceremony	Sept. 28, 2012
Orientation	Sept. 28
Class begins	Oct. 1
Winter Vacation	Dec. 25, 2012 - Jan. 4, 2013
Class ends	Jan. 25
Supplementary Class Period	Jan. 28 - Feb. 8
Self-Education Period	Feb. 12 - Apr. 5

Spring Semester (Apr. 2013 - Sept. 2013)

Orientation (<i>for Students Participating only in the Spring Semester</i>)	Apr. 5, 2013
Class begins	Apr. 8, 2013
University Foundation Memorial Day	June 22
Class ends	Jul. 29
Supplementary Class Period	Jul. 30 - Aug. 6
Self-Education Period	Aug. 8 - Sep. 13
Closing Ceremony	Aug. 7

(Final examinations are usually held on the last day of each course.)

National Holidays (Oct. 2012 - Sept. 2013)

Health-Sports Day	Oct. 8, 2012
Culture Day	Nov. 3
Labor Thanksgiving Day	Nov. 23
The Emperor's Birthday	Dec. 23
Substitute Holiday	Dec. 24
New Year's Day	Jan. 1, 2013
Coming-of-Age Day	Jan. 14
National Foundation Memorial Day	Feb. 11
Vernal Equinox Day	Mar. 20
Showa Day	Apr. 29
Constitution Day	May 3
Greenery Day	May 4
Children's Day	May 5
Substitute Holiday	May 6
Ocean's Day	July 15
Respect-for-the-Aged Day	Sept. 16
Autumnal Equinox Day	Sept. 23

(Academic Calendar and National Holidays are subject to change without notice.)

2. Courses Offered in Academic Year 2012-2013

In the following, the course with an asterisk means a regular course originally offered in English for regular Japanese students. Some courses may not be opened in case students taking lectures are very few.

CORE COURSE (Required)

- Individual Research Training A & B (5 credits each)

ELECTIVE COURSES

- Japanese 1, 2, 3, 4 (4 credits each)
- Japanese Culture A & B (2 credits each)
- Japanese Culture C & D (2 credits each)
- Science, Technology and Industry of Japan (2 credits)
- Mathematics A & B* (2 credits each)
- Introductory Courses of Experimental Research in Physics III * (2 credits)
- Physical Chemistry (2 credits)
- Basic Inorganic Chemistry (2 credits)
- Geophysics (2 credits)
- Dynamics of the Earth (2 credits)
- Ecology and Evolution (2 credits)
- Molecular and Cellular Biology (2 credits)
- Basic Quantum Field Theory (2 credits)
- Basic Elementary Particle Physics (2 credits)
- Basic Solid State Spectroscopy (2 credits)

- Evolution of the West Pacific Island Arcs and their Environments (2 credits)
- Agricultural Science (2 credits)
- Mechanics of Materials (2 credits)
- Materials Science and Engineering A & B* (2 credits each)
- System Dynamics* (2 credits)
- Computer Software Engineering* (2 credits)
- Fundamentals of Computer Engineering* (2 credits)
- Electricity & Magnetism A & B (2 credits each)
- Introductory Quantum Mechanics* (2 credits)
- Chemistry of Materials* (2 credits)
- Biotechnology* (2 credits)
- Separation Science and Engineering* (2 credits)
- Environmental Chemistry and Engineering* (2 credits)
- Geological Environment and Earthquake Disaster (2 credits)

* Regular course that Japanese students take.



3. Class Schedule (tentative)

Fall, 2012

Time	I 8:50-10:20	II 10:30-12:00	III 13:00-14:30	IV 14:40-16:10
Mon	Japanese 1, 2, 3, 4	Japanese 1, 2, 3, 4	*Individual Research Training A	*Individual Research Training A
			Introductory Courses of Experimental Research in Physics III	Introductory Courses of Experimental Research in Physics III
Tue	Mathematics A	Dynamics of the Earth	*Individual Research Training A	*Individual Research Training A
	Ecology & Evolution	Basic Quantum Field Theory	Introductory Courses of Experimental Research in Physics III	Introductory Courses of Experimental Research in Physics III
Wed	Agricultural Science	Japanese Culture A	*Individual Research Training A	Individual Research Training A
	Physical Chemistry	Basic Elementary Particle Physics	Japanese Culture C	
	Mechanics of Materials			
Thu	Japanese 1, 2, 3, 4	Japanese 1, 2, 3, 4	Individual Research Training A	*Individual Research Training A
		Basic Solid State Spectroscopy		System Dynamics
Fri	Electricity & Magnetism A	Materials Science & Engineering A	*Individual Research Training A	Individual Research Training A
			Introductory Quantum Mechanics	
			Environmental Chemistry and Engineering	

* Class schedule of Individual Research Training will be rescheduled for students taking Introductory Courses of Experimental Research in Physics III, Japanese Culture C, System Dynamics, Introductory Quantum Mechanics or Environmental Chemistry and Engineering.

Spring, 2013

Time	I 8:50-10:20	II 10:30-12:00	III 13:00-14:30	IV 14:40-16:10
Mon	Japanese 1, 2, 3, 4	Japanese 1, 2, 3, 4	* Individual Research Training B	* Individual Research Training B
			Fundamentals of Computer Engineering	Basic Inorganic Chemistry
Tue	Mathematics B	Evolution of the West Pacific Island Arcs and their Environments	Individual Research Training B	Individual Research Training B
	Computer Software Engineering			
Wed	Japanese 1, 2, 3, 4	Japanese 1, 2, 3, 4	* Individual Research Training B	* Individual Research Training B
			Biotechnology	Japanese Culture B
Thu		Chemistry of Materials	* Individual Research Training B	Individual Research Training B
			Separation Science & Engineering	
Fri	Geophysics	Molecular & Cellular Biology	* Individual Research Training B	* Individual Research Training B
	Electricity & Magnetism B	Materials Science & Engineering B	Geological Environment & Earthquake Disaster	Japanese Culture D
			Science, Technology & Industry of Japan	

* Class schedule of Individual Research Training will be rescheduled for students taking Fundamentals of Computer Engineering, Basic Inorganic Chemistry, Biotechnology, Japanese Culture B, Separation Science & Engineering, Geological Environment & Earthquake Disaster, Science, Technology & Industry of Japan or Japanese Culture D.

For optional course, students may audit regular courses by permission of the instructor. However, students should not expect any special treatment in such courses.

Students in this program will be registered in the Undergraduate Schools of Science, Engineering, or Agricultural Science as special auditing students. The course credits will be certified by the respective Faculties. The academic credits earned at Tohoku University should be acceptable at the student's home

institution in accordance with the student exchange agreement. Students interested in pursuing credit transfer should discuss this with their academic advisor of their home institution. Academic advice and guidance for daily life will be provided by the Center for International Exchange.

IV

ELIGIBILITY FOR APPLICATION

The applicant must satisfy the following conditions to be eligible for enrollment in this program:

- ① The applicant must be enrolled in his/her home institution as a regular third (or fourth) year student.
- ② The home institution must have a formal student exchange agreement with Tohoku University.

V

HOW TO APPLY

The student wishing to apply for admission should fill out the prescribed forms and submit them to his/her home institution by the appropriate deadline.

* For further information, see <http://www.insc.tohoku.ac.jp/cms/index-e.cgi?num=90204160748>

VI

FINANCIAL AID

Since the program is based on the exchange agreement between Tohoku University and the home institution of the students, students are eligible for a waiver of tuition fees.

Although students themselves should basically bear the cost of living, they are eligible to apply for the

following scholarship, which is provided by the Japanese Government through Japan Student Services Organization, (JASSO).

JASSO International Student Scholarship for Short-term Study in Japan provides an allowance of ¥ 80,000/month for 6 or 12 months.

VII

PROFILE OF TOHOKU UNIVERSITY

Tohoku University was established in Sendai in 1907 as Tohoku Imperial University by consolidating an agricultural college and a science college. It is the third oldest former Imperial University after Tokyo and Kyoto.

Tohoku University is well known for its open and progressive policies. It was the first University to admit women, and also pioneered in opening a university by offering public lectures. Already in 1911, Tohoku University graduated its first foreign students, thus becoming the Japanese university with the longest history of foreign graduates. All of these were epoch-making events in the history of Japanese higher education. The "Spirit of Open Doors" remains alive within the tradition of Tohoku University. Along with

this spirit, the University has placed a high value on the "Spirit of Search for Truth" and emphasized original and creative research. Thus Tohoku University is known for its strong orientation toward academic research.

In the years following its establishment, Tohoku University has grown into an institution that includes the fields of medicine, science, and engineering among others. Currently the University has ten undergraduate and fifteen graduate schools, and five research institutes. The current student body consists of over 18,000 students, including roughly 1,500 international students from 84 countries. The university is staffed with about 5,900 employees, including about 850 full professors.



1. Cooperative Laboratory Study Program (COLABS) for Graduate Students

For graduate students, Tohoku University offers an Advanced Short-term Exchange Program, called the Cooperative Laboratory Study Program (COLABS). This program is designed to nurture creative capabilities in ambitious and research-oriented international students related to research in science and engineering, and/or interdisciplinary fields, and to expand their activities into new science and engineering fields. To accomplish this, the program offers scientific research training in the assigned research laboratory as well as basic science, engineering and related courses taught in English. The scientific research training of the Individual Research Training in Lab (IRTLab) will be conducted with the support of the faculty and research group members, through experiments, calculations, theorizations and related activities to confer basic research-related knowledge and techniques. The IRTLab will arrange close and strong academic collaborations between the Tohoku and partner universities. Though the short-term exchange international students are not degree candidates at Tohoku University, through the IRTLab course an experience similar to that of degree students is offered by special arrangements.

The COLABS program also offers courses taught in English on Japanese language, culture, and society aimed at promoting understanding of Japan's language and social customs. Cultural and intellectual exchange with Japanese students is an integral part of the program.



Scene of COLABS IRTLab

This will be accomplished through class work as well as participation in the various activities of research groups. These education processes will contribute to developing human resources for the global society.

Depending on your home university's grading requirements, you may also be able to have your successes at Tohoku University credited towards your degree back home. The exchange duration is one semester or one year (less than 12 months).

For further information, see

<https://www.cefix.insc.tohoku.ac.jp/ASEP/COLABS/index.html>

COLABS Students after their Individual Research Presentations



2. Housing

Tohoku University International House and University House Sanjo are available for the stay at reasonable rates (typically ¥25,000/month, including utilities).

For further information, see

<http://www.bureau.tohoku.ac.jp/ryugaku/english/kaikan/index.html>

3. Health Insurance

The National Health Insurance Act requires all foreigners who are going to stay (or may possibly stay) in Japan for more than one year to join the National Health Insurance program. Accordingly, all the participants have to join this program while staying in Japan. The amount that the students were asked to contribute in 2010 was approx. ¥1,800/month.

4. Cost of Living

The cost of living in Sendai is typically ¥80,000/month.

5. About the City of Sendai*

Sendai, the largest city in the Tohoku Region with about one million inhabitants, is located about 350 km to the northeast of Tokyo. It can be reached in two hours from Tokyo by Shinkansen Super express, “the Bullet Train.” It is an important economic and cultural center in northern Japan with many universities,

government agencies, and corporate branch headquarters. Sendai, often called the “City of Trees”, is a city known for its pleasant streets lined with many trees, and it is also regarded as an “academic city” with its center on Tohoku University. Because of its northern environment, the summers are cool and the winters are moderately cold. The City is bordered by mountains to the west and the Pacific Ocean to the east. It has many historic and scenic sites surrounded by unspoiled nature. Sendai is regarded as one of the most pleasant Japanese cities to live in.

*For further information, see

<http://www.stcb.or.jp/eng/index.html>



Single Room in the University House Sanjo

University House Sanjo





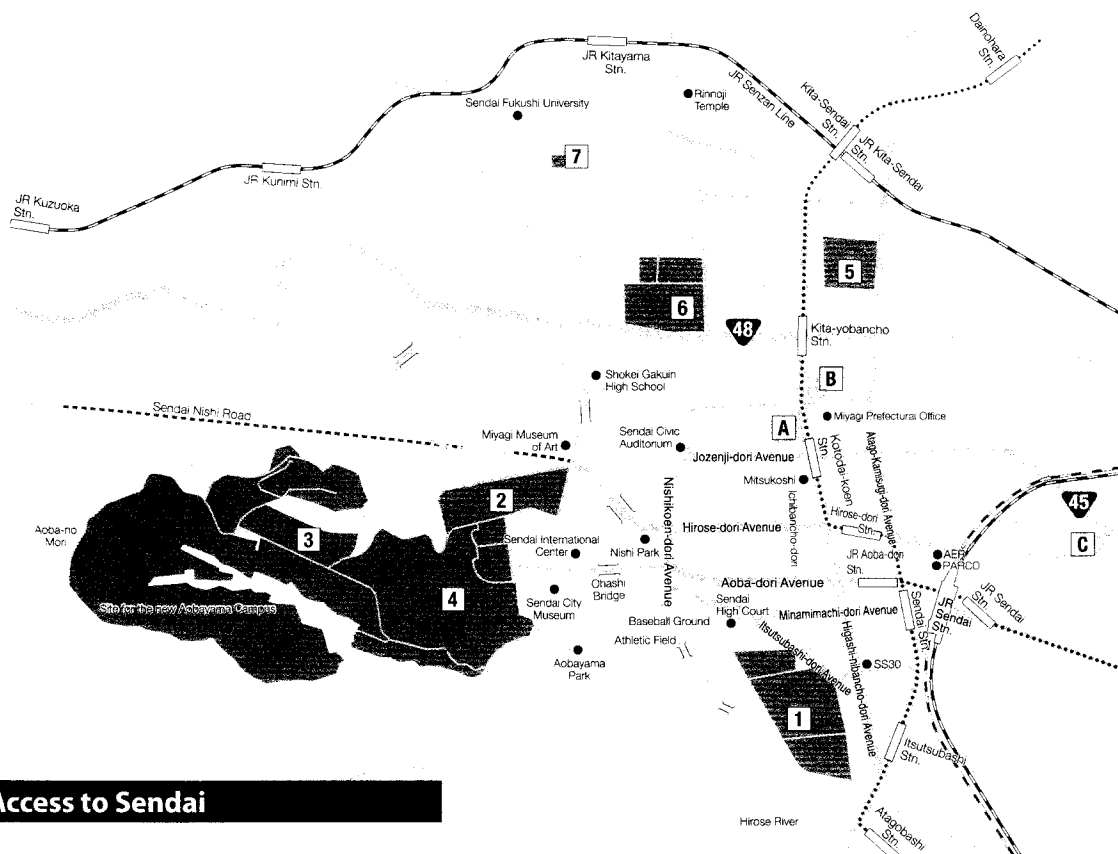
6. Locations of Tohoku University Campuses

Tohoku Univ. Campuses

- | | |
|--------------------|--|
| 1 Katahira Campus | 5 Amamiya Campus |
| 2 Kawauchi Campus | 6 Seiryō Campus |
| 3 Aobayama Campus | 7 International House and University House Sanjo |
| 4 Botanical Garden | |

Public Office & City Hall

- | |
|-----------------------------|
| A Sendai City Hall |
| B Aoba Ward Office |
| C Sendai Immigration Office |



7. Access to Sendai

■ Narita Airport ⇄ Sendai Airport
1 hour (by airplane)

■ Sendai Airport ⇄ JR Sendai Station
(about 25 km)
30 minutes (by Sendai Airport Line)

■ Narita Airport ⇄ JR Tokyo Station
(about 60 km)
1 hour (by train)

■ JR Tokyo Station ⇄ JR Sendai Station
(about 350 km)
2 hours (by Shinkansen Superexpress)

