



Tokyo Tech



超スマート社会卓越教育院  
Tokyo Tech Academy for Super Smart Society

# Information Session for WISE-SSS Admissions

## Information Session for SSS Matching Workshop

• April 24, 2024



Dean / Program Coordinator

**Kei Sakaguchi**

Chief Operating Officer

**Akinori Nishihara**

Vice Program Coordinator

**Takeshi Hatanaka**



This program received the highest grade of “S”  
in the mid-term evaluation by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan.

# CONTENTS

## PROGRAM INTRODUCTION

Part 1

### Program Introduction

- 1 About WISE-SSS
- 2 Curriculum
- 3 Features of SSS students

Part 2

### Registration

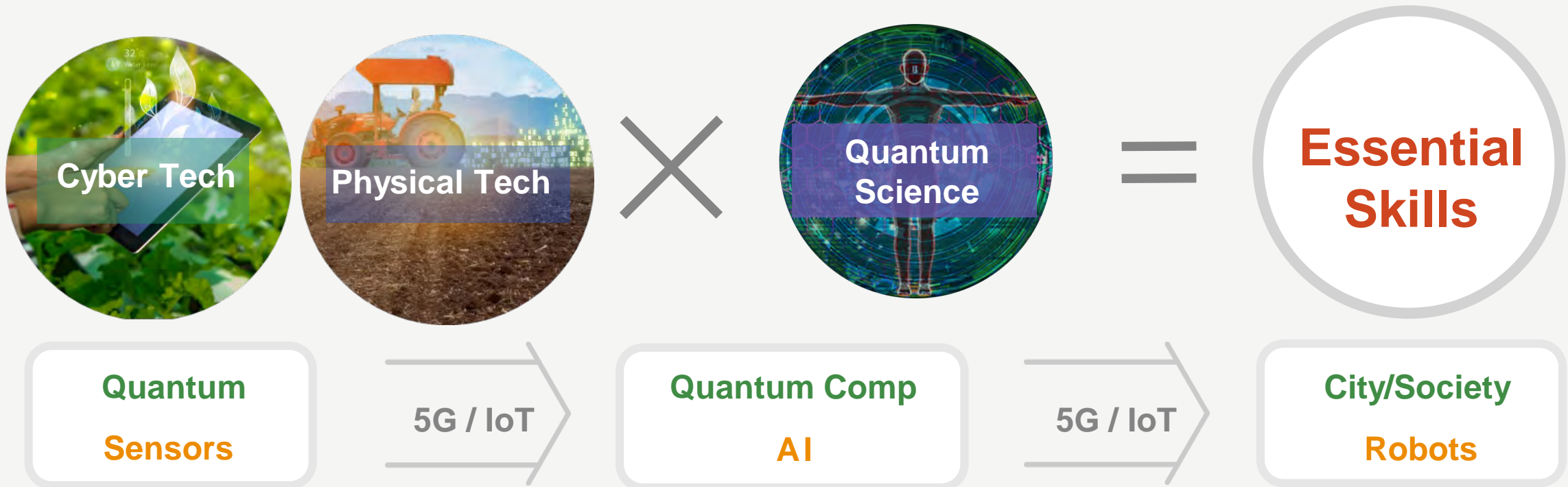
- 4 Financial support
- 5 Registration method (requirements and schedule)

- Appendix
- Annual schedule

# – 1 About WISE-SSS

## What is the talent that leads SSS?

What are the academic studies required for realizing Super Smart Society (SSS)?





5 abilities cultivated by WISE-SSS

What are the abilities required for the leaders of SSS?





## Three features of WISE-SSS

(Doctoral Program for World-leading Innovative & Smart Education for SSS)

The WISE-SSS program provides you with abundant human resources, connections to faculty and external institutions, and a satisfactory research environment.

### Collaboration with the real-world and top-class researchers



SSS Promotion Consortium

Industry



Participation of 60 companies & research institutes, and government institutions

### Faculty that covers various fields

Faculty participating in the program, overseas advisors



More than 70 faculty members from all Tokyo Tech

### Eight fields in Tokyo Tech to learn cutting-edge technology

Experimental environments to learn different fields

Research and Education fields

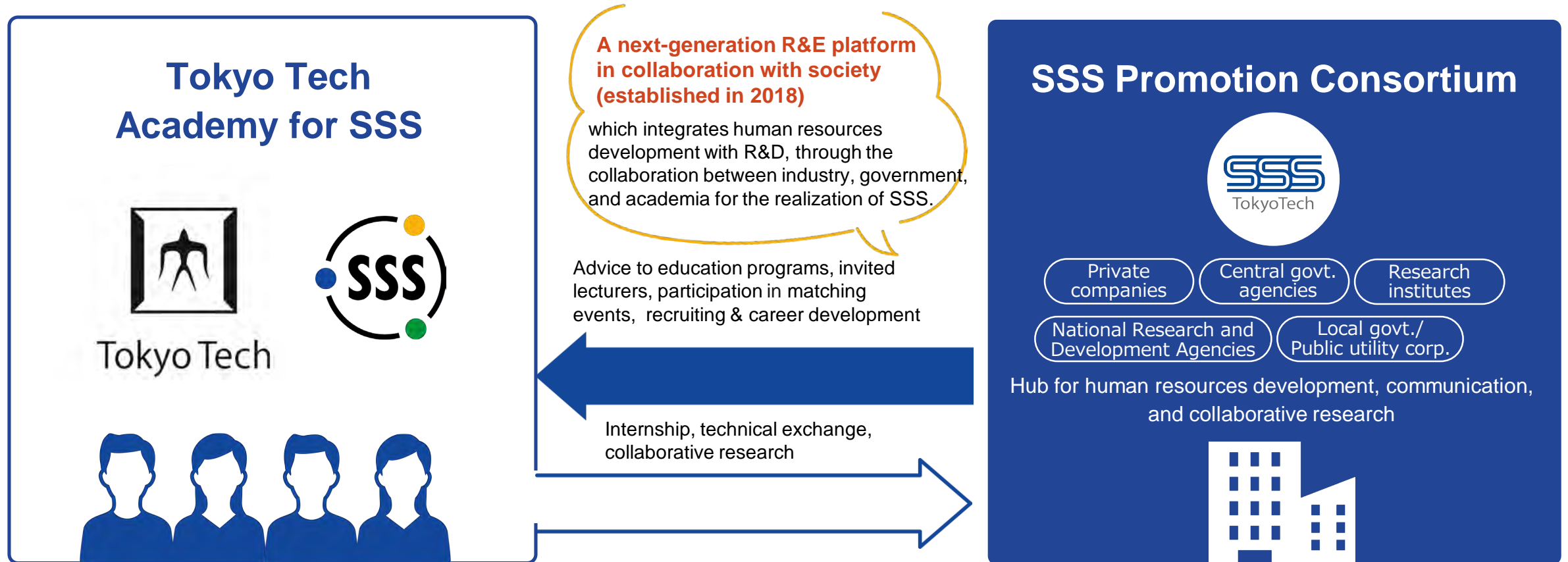


Fields



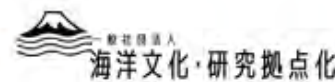
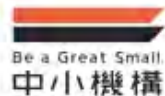
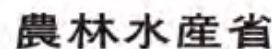
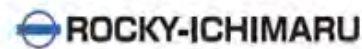
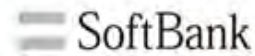
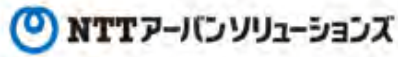
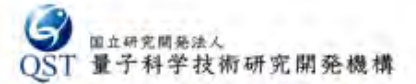
## • WISE-SSS & SSS Promotion Consortium

It is totally different from the conventional education systems so that you can experience education/research in collaboration with 60 companies, research institutes, and government institutions.



## Institutions participating in the SSS Promotion Consortium

60 institutions (National Research and Development Agencies, companies, and govt. institutions) participate in the consortium.






# Faculty participating in the program

76 faculty members from 8 Schools/Institutes and Institute for Liberal Arts will support your learning process.


**School of Life Science and Technology**




**School of Science**



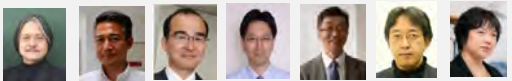
**CITL**




**Institute for Liberal Arts**




**School of Computing**



**Institute of Innovative Research**





**School of Engineering**




**Quantum Science**

**Hidetoshi Nishimori**  
Institute of Innovative Research  
Quantum Annealing Theory for Quantum Computers



**Quantum Simulation and Quantum Sensors Based on Cold Atoms**

**Mikio Kozuma**  
Institute of Innovative Research






**Big Data AI**

**Misako Takayasu**  
School of Computing  
Interdisciplinary Big Data Analysis and Multi-layered Temporal-Spatial Modeling


**Sensor**

**Keisuke Tanaka**  
School of Computing  
Security Technology Ensuring Safety after Quantum Computers



**Cyber Space**

**Mitsuji Sampei**  
School of Engineering  
Control Theory/Control Engineering






**Smart City**

**Kei Sakaguchi**  
School of Engineering  
5G Cellular Networks with Millimeter Waves



**Physical Space**

**Shoichi Kishiki**  
Institute of Innovative Research  
Quake-absorbing/Seismic Control and Monitoring Technology for Skyscrapers





**Robots/Autonomous Vehicles**

**Koichi Suzumori**  
School of Engineering  
Artificial Muscle and Disability Robots

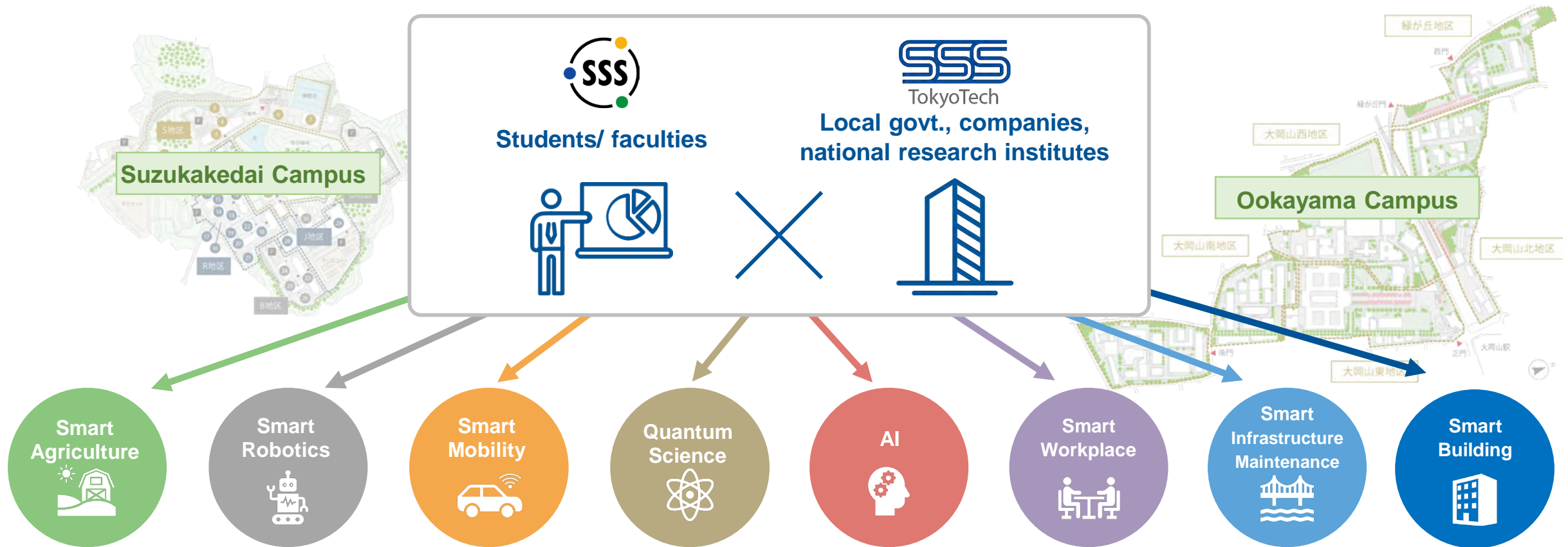
**School of Environment and Society**



• Research & Education fields

By utilizing 8 research and education fields established within and out of the campus, you can pragmatically learn cutting-edge technologies in various fields.

Open innovation platforms to innovate super smart society



## Research & Education fields



### Smart Mobility

Research on automated driving technology using cutting-edge wireless communications and sensors



Ookay ama



### AI

Research on establishing a platform for utilizing machine learning services



Ookay ama



### Smart Workplace

Research on “Smart Workplaces” with sensing technology



Suzukake dai/Maru nouchi



### Smart Infrastructure Maintenance

Research on cutting-edge technology related to next-generation infrastructure maintenance



Ookay ama



### Smart Robotics

Research on robot technologies in different environments, including land, air, and sea



Ookay ama



### Quantum Science

Research on next-generation quantum computing and quantum sensors



Ookay ama



### Smart Agriculture

Research on elemental technologies for small-scale outdoor smart agriculture



Suzukake dai



### Smart Building

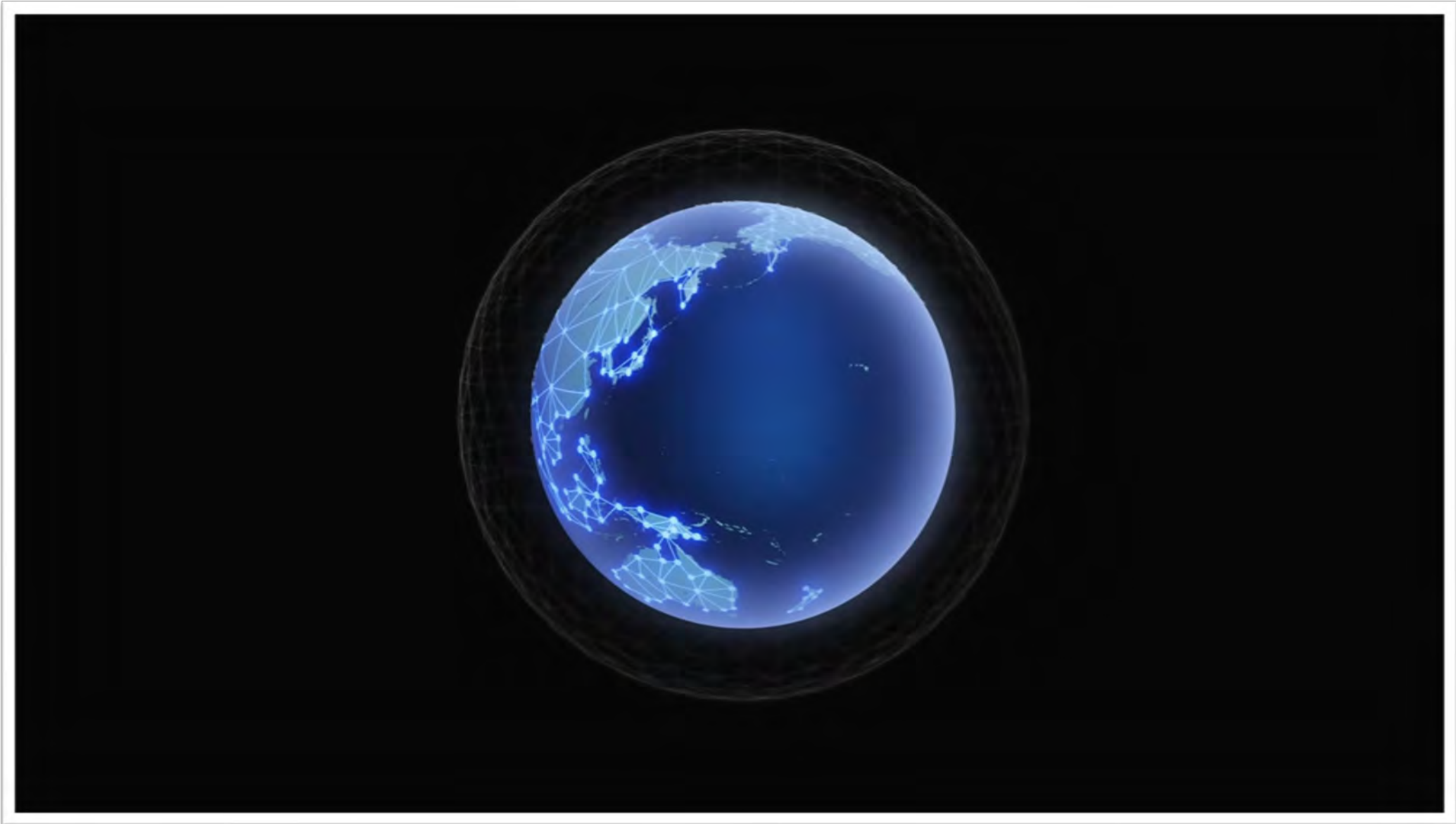
Research on the safety and continuous usability of a building using high-performance sensors



Suzukake dai



- Research & Education field





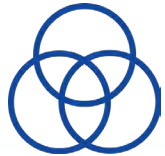
# - 2 Curriculum



## Three Features of the Curriculum

# 01

### Interdisciplinary program



You can obtain new perspectives from interdisciplinary faculty and students to further develop your research and use it to solve social problems.

# 02

### Curriculum in collaboration with society



You can gain pragmatic experience through collaboration with world-leading research institutes, companies, and government institutions.

# 03

### Full support (education, finance, and career)

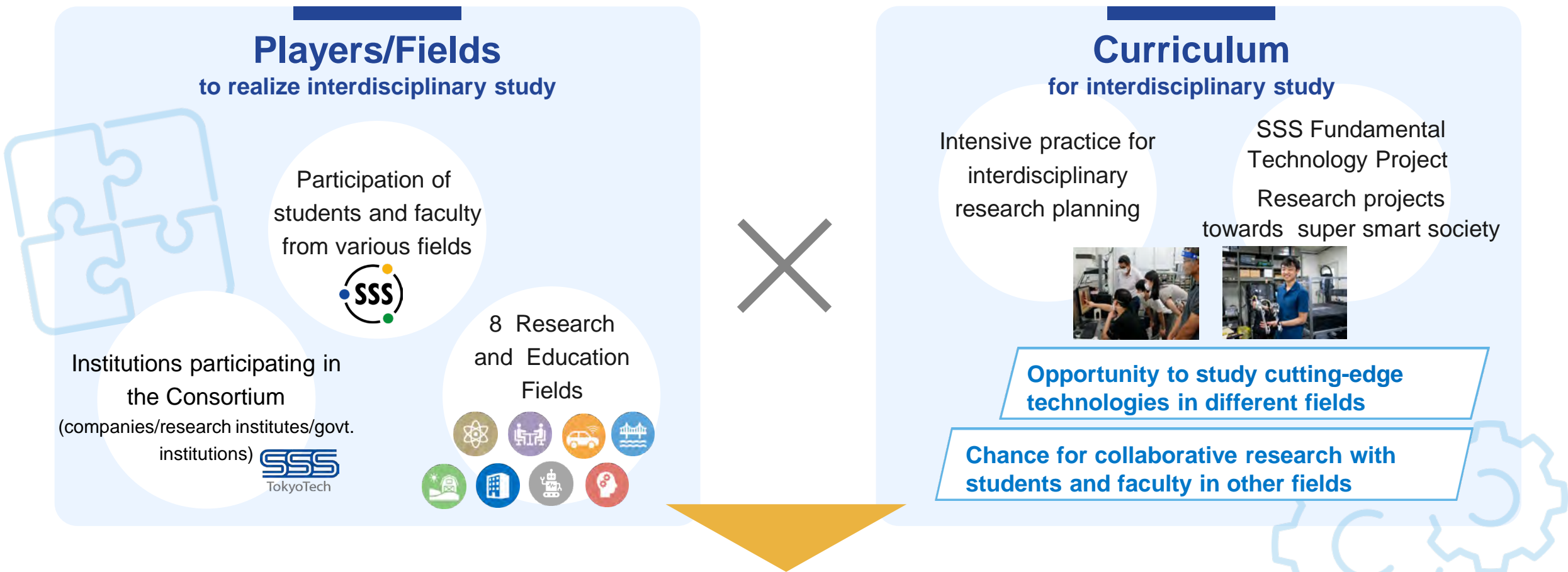


You can receive broad support on education, research, finance, and career development.



# 01 • Interdisciplinary Program

You can obtain new perspectives from interdisciplinary faculty and students to further develop your research and use it to solve social issues.



You can experience our unique field practice by utilizing 8 research and education fields and learning cutting-edge technologies in different fields. (In FY2023, the event was held in 6 areas)



# Intensive Practice for Interdisciplinary Research Planning



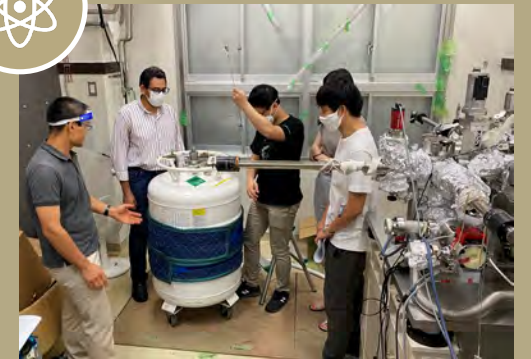
Smart Mobility



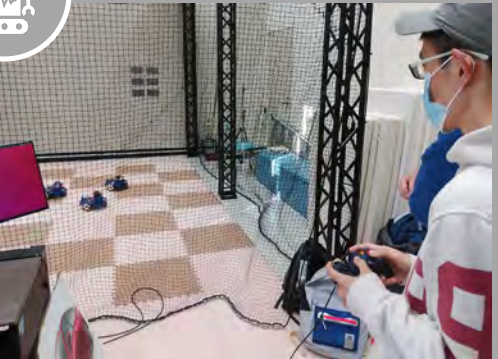
Smart Mobility



Quantum Science



Quantum Science



Smart Robotics



Smart Workplace



Smart Agriculture



Smart Building







Case Study

## Interdisciplinary Research

Spontaneous collaborative research between students opens up the future of autonomous driving.



Lagahit Rivera  
Miguel Luis

Urban Design and Built Environment Course,  
School of Environment and Society

[Research area]  
Creation of a high-definition 3D road map

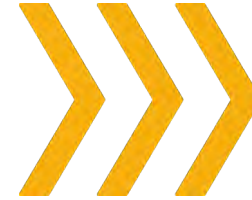
LI Zongdian

Electrical and Electronic Engineering Course,  
School of Engineering

[Research area]  
V2X communication  
Dynamic resource allocation for autonomous driving



Meeting at WISE-SSS led to the collaborative research of the two



“Conducted collaborative research on providing a high-definition road map to moving vehicles through the use of V2X (Vehicle to Everything) communication.”

Presentation at the international conference ▶

12th International Symposium on Mobile Mapping Technology (MMT 2023)

'EXPLORING GROUND SEGMENTATION FROM LIDAR SCANNING-DERIVED IMAGES USING CONVOLUTIONAL NEURAL NETWORKS'





# Connecting Interdisciplinary Education to Career Paths

By learning about cutting-edge technology in a different field, gain the ability to apply the research

## KITTISARES Sarin

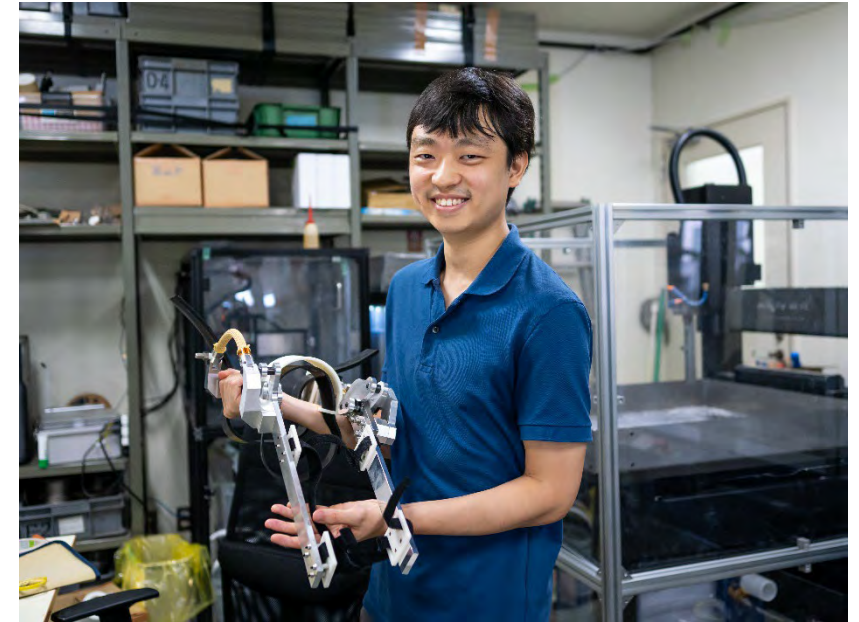
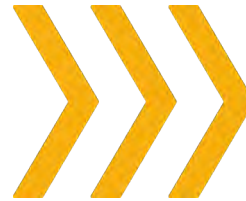
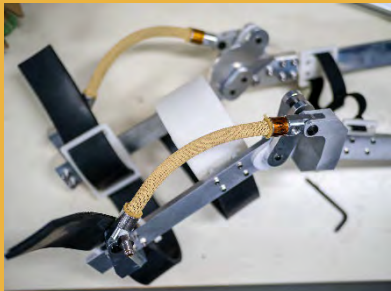
**Mechanical Engineering Course, School of Engineering**

(Research area)

research to support the movement of the body by using the technology of artificial muscles and exoskeleton

**Getting a job at NEC Data Science Laboratories, a joint research partner**

Aiming for a society in which no one is left behind, including elderly and disabled people

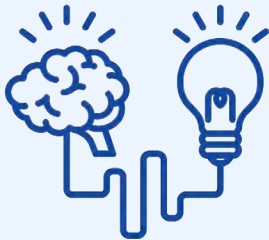


“ Our knowledge in the limited research field is often not enough to solve real societal problems. **Through this program, I learned how to use my research for the sake of society, which was the maximum benefit of having registered for SSS** ”

## 02 Curriculum in Collaboration with Society

You can gain pragmatic experience through collaboration with world-leading research institutes, companies, and government institutions.

### SSS Matching Workshop



It is an opportunity to get to know how your thoughts and research will be accepted by society. It may lead to collaborative research, internship, and even employment.

### Courses on SSS Innovation



You can study real-world issues and cutting-edge projects from the faculty members who lead the society.

### Ota City Off-Campus Project



It is an opportunity to pragmatically learn from entrepreneurs who are graduates of Tokyo Tech. It will be accredited as a career subject.

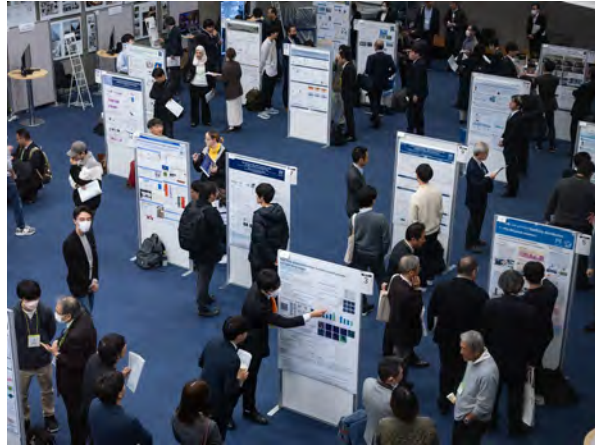




# SSS Matching Workshop

(Twice a year, participation is required for all registered students.)

A precious opportunity to get to know how your thoughts and research will be accepted by society and beyond academia.



Student poster session



Discussion at networking



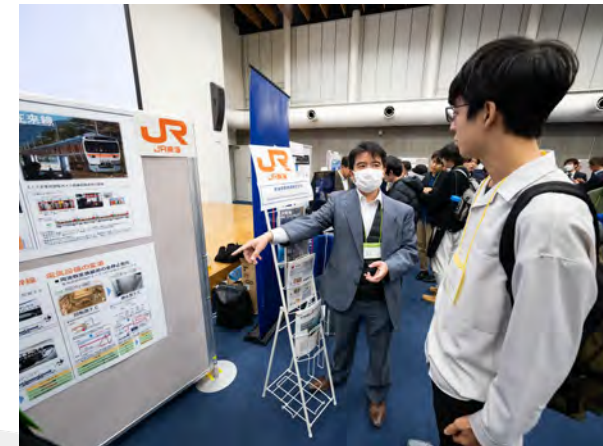
Company booth



Group photo



Award for excellence



Company booth







## SSS Matching Workshop

(Twice a year, participation required is for all registered students.)

Through the workshop, there are new opportunities for internships and matching collaborative research.

**You should actively present your ideas.**

### Dates of Matching Workshops & Records of Matching

Academic Year	Date	Participants		Number of matching
		Students (no. of people)	Participating institutions (no. of institutions)	
2019	11/8	77	15	10 cases
2020	Spring Semester 6/8, 6/29	34	18	16 cases, 6 institutions
	Autumn Semester 11/18, 12/2	29	18	19 cases, 5 institutions
2021	Spring Semester 6/9, 7/1	30	21	15 cases, 6 institutions
	Autumn Semester 11/17, 12/8	41	18	3 cases, 3 institutions
2022	Spring Semester 6/8, 6/29	37	23	11 cases, 7 institutions
	Autumn Semester 11/16, 12/7	29	18	8 cases, 3 institutions
2023	Spring Semester 6/7	42	21	21 cases, 9 institutions
	Autumn Semester 11/29	41	21	<b>24 cases, 8 institutions</b>





## Profile

**Infrastructure Management Laboratory,  
D3 in Civil Engineering Course,  
School of Environment and Society**
**■ Research theme**

Visualization of current distribution in concrete components by using diamond quantum sensing

**■ Attended workshop**

Autumn 2019 (M2 then)

In the workshop seeking for research hints, I obtained the matching opportunity with National Institutes for Quantum Science and Technology (QST).

The internship and collaborative research are then started.

“ The workshop is an opportunity to receive opinions from top-class professors and researchers. By presenting not only my research contents but also my research difficulties (needs), I obtained the matching opportunity. ”



## Profile

**Global Engineering for Development,  
Environment and Society Course,  
School of Environment and Society**
**■ Research theme**

Digital recording and application of exhibition technology in local museums. Reconstruction of local communication through museums.

**■ Attended workshop**

Spring 2021

Through the research in the exhibition technology, I was hoping to create a new value together with the local community. Then I obtained matching opportunities with Ota City and started the experiment at Ota City's Ryushi Memorial Museum.

“ I got a chance to collaborate with Ota City. The SSS Matching Workshop is a chance to hone presentation skills. I believe you can expand your ability to make yourself more appealing through this workshop. ”





# Courses on SSS Innovation

- On-demand lectures from top-class researchers and engineers from companies, research institutes, and government institutions
- You can learn about real-world issues in wide areas and cutting-edge projects
- Discussions with lecturers and students through the bulletin board







## Ota-City Off-Campus Project

Prepares pragmatic courses to study entrepreneurship in collaboration with Ota City.

### SSS.S433 (Experience)

- Get to know about **“starting up a business”** as one of the choices of **career path**, and conduct relevant exercises.
- Listen to various stories from presidents, etc., of start-up companies who are Tokyo Tech graduates.
- **Fieldwork unique to Ota City**

#### Schedule for 2024 academic year:

Haneda Innovation City (HIC), Tokyo Medical and Dental University, and factory apartments (Techno FRONT Morigasaki)

### SSS.S635 (Practice)

More pragmatic curriculum aiming at **“commercialization of your research theme”**



This course can fulfill one of the registration requirements in WISE-SSS, "Participation in an internship".



# 03 • Full Support (education, finance, and career)

You can receive broad support on education, research, finance, and career development.

## Global Mentor



Through communication with top-class researchers in foreign institutions in partnership, you can gain new viewpoints on your career and research and obtain a global mind.

## Global Off-Campus Project



It is an opportunity to conduct an international collaborative research in a foreign research institute. There will also be a support for travel expense.

## Financial Support



In order to focus on study and research, you can receive the abundant support of scholarship and incentive program.

**Explained in detail at 04**

## Support by faculty of Tokyo Tech Academy for SSS



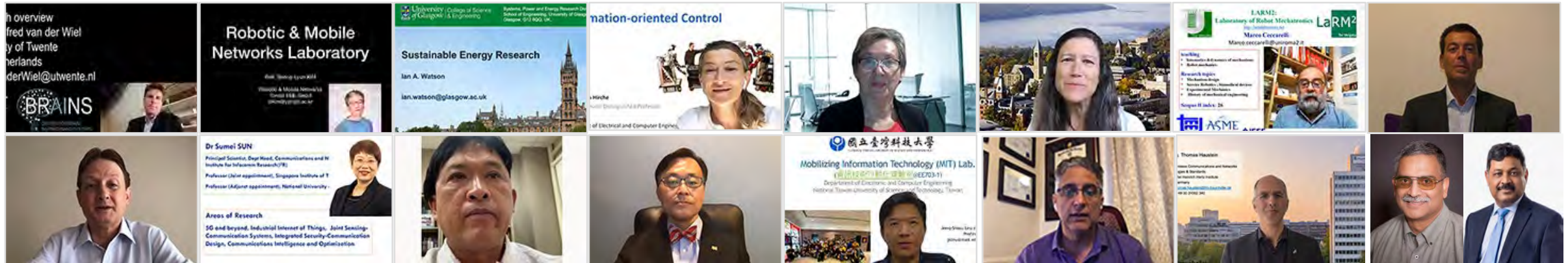
Consulting on course planning and off-campus project.

(Weekly Students Salon or Communication through Teams).

**Global Mentor**

Support your career development through the mentoring system

Assign a global mentor (overseas advisor) to each student. Through communication, you can gain a new viewpoint to your career and research and obtain a global sense.



**(Reference) SSS Global Forum**

“SSS Global Forum” to be held every November, is a compulsory event for SSS students, in which you will have a chance to actually meet the advisors invited from overseas.



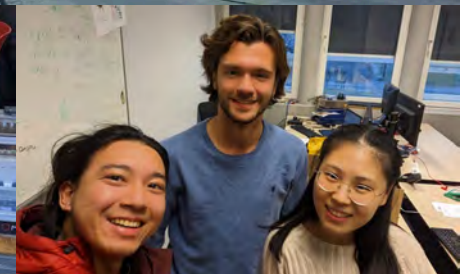
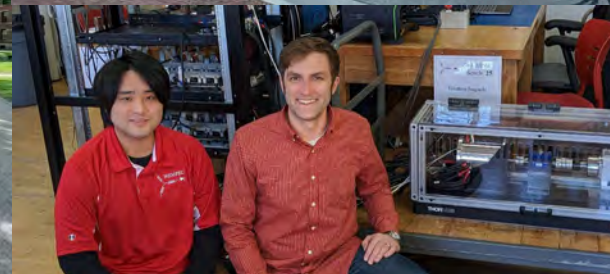




## Global Off-Campus Project

You will conduct an international collaborative research in a foreign research institute. You will have precious experiences not restricted to research, that you will never gain in domestic off-campus ones.

**You can obtain at maximum of 800,000 JPY as support for travel expenses.  
(It can be used in parallel with other financial support.)**





# Career Development Support

Through the curriculum of SSS, your research will lead directly to your career.



**From global off-campus project to academia in a foreign university**

**Dr. Takahiro Noguchi**

Chiba Lab., Dept. of Electrical and Electronic Engineering, School of Engineering

From Sept. 2022, with the global off-campus research project, he started studying at the University of Wisconsin-Madison.

After completing the course, he continues his research as a postdoctoral researcher at the University of Wisconsin-Madison.



**Matching Workshop led to collaborative research, and employment by a global enterprise.**

**Dr. Yin Yue**

Sakaguchi Lab., Dept. of Electrical and Electronic Engineering, School of Engineering

Through the Matching Workshop, a collaborative research with DENSO was realized.

The result of the research was recognized, and she was hired by the Sony Group to start working from April 2022.



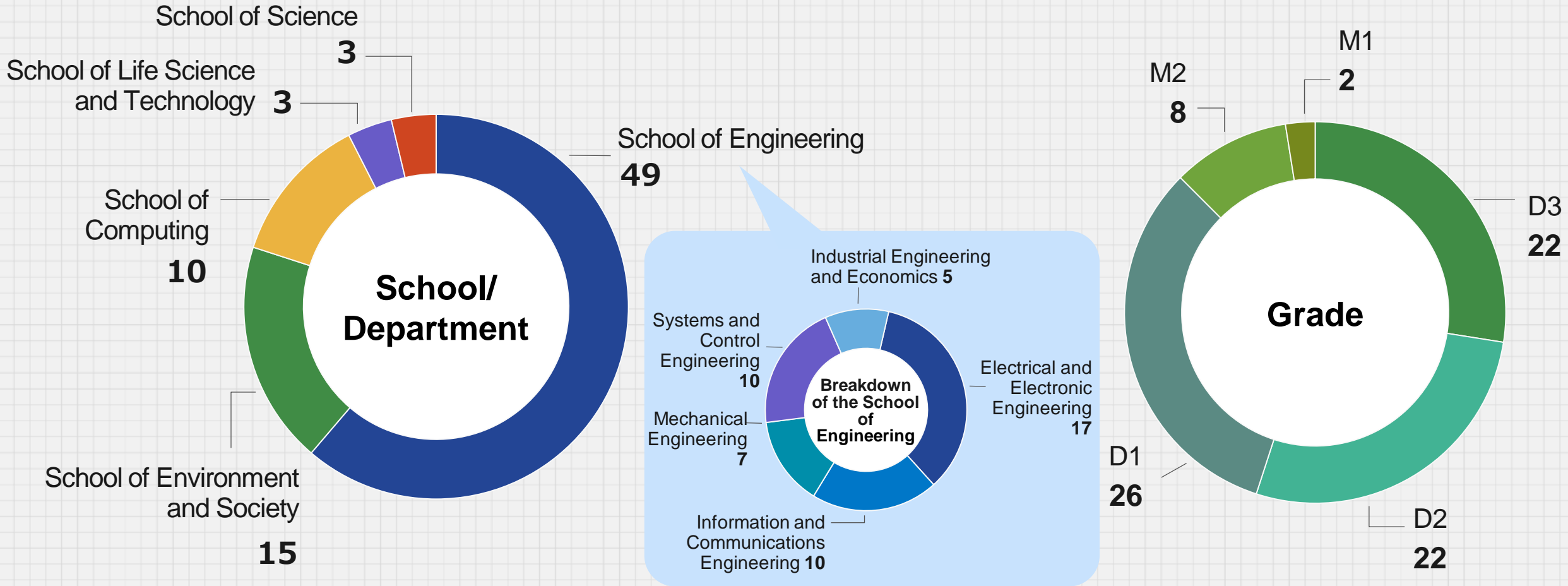
10 students have already completed this program and are active in the corporate and academic world (as of October 2023)

# – 3 Features of SSS Students

# Attributes of Registered Students

Students from 5 schools register to the program.  
It is also an international environment.

As of April 2024





## Voices of Registered Students

Also open on the Website.

For details, please  
visit the Website.



The attraction is interacting  
with faculty and students  
outside your own major

### Liu Yiting

Life Science and Technology  
Course, School of Life Science  
and Technology.

The biggest advantage of WISE-SSS is that I get to communicate with people engaged in research fields outside my area of expertise

Many students in SSS have a positive aggressiveness, which is critical for being a researcher so inspired by them a lot



Positive effect also in  
finance and  
employment

### Homare Abe

Physics Course,  
School of Science

In the beginning, I felt half-and-half if I should register.

In the Matching Workshop, I was stimulated by the discussions with people from companies.

Abundant financial support is attractive.

WISE-SSS has merits in various ways, such as finance support and career development.

# Profile of a Registered Student

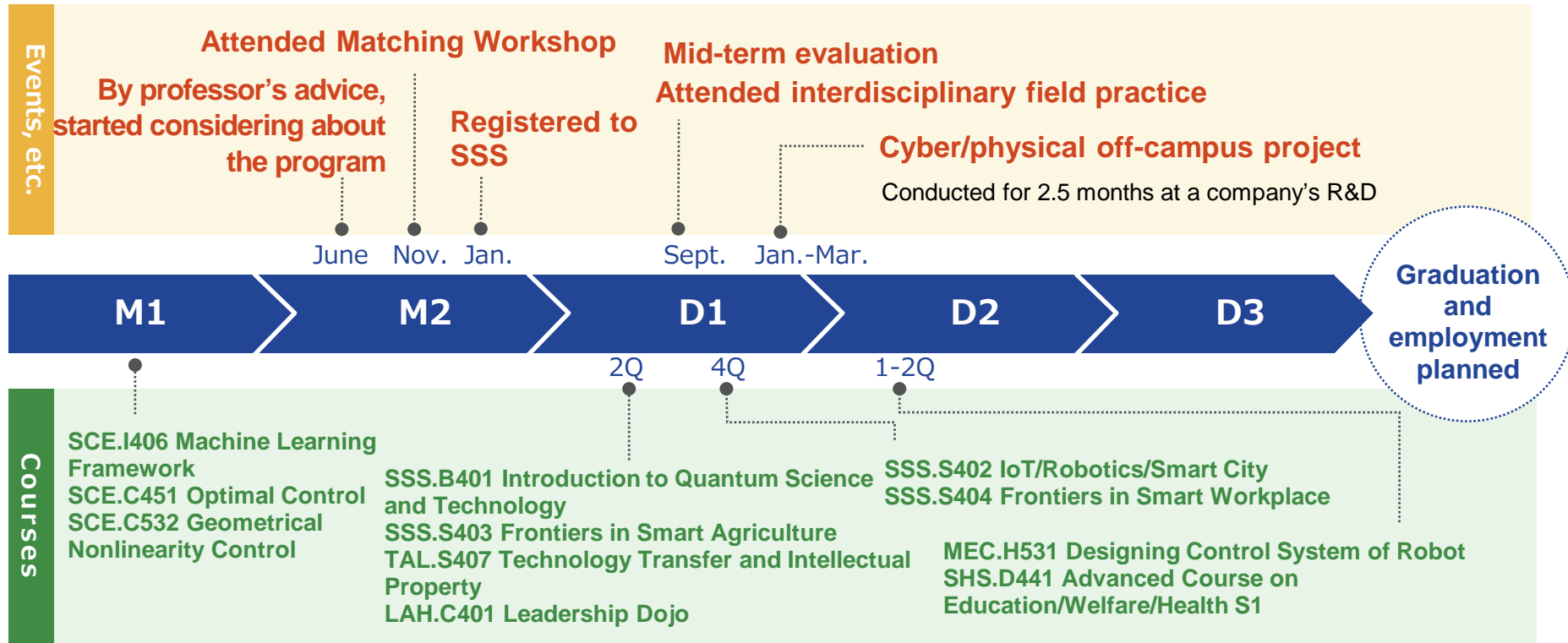


**Yuya Okada**

Systems and Control Engineering Course,  
School of Engineering  
Planned to graduate in 2025

**[Received scholarship]**

JST Support for Pioneering Research Initiated by Next Generation  
“Cross the border! Tokyo-Tech pioneering doctoral research program”



**Advice to students who are going to register**

- Basically, the courses required for completion are those from 400s and 500s, so if you are considering to register, it may be wise to take these courses in advance.
- For those at M1, it is better to prepare the internship quickly.  
(Note: this student did not conduct the internship during the master's degree due to COVID-19.)
- SSS Courses that can be considered Entrepreneurship courses (formerly Career development courses) can also be counted toward your major's completion requirements.



# - 4 Financial Support





## Financial Supports at Tokyo Tech

It is one of the prerequisites for the SSS Doctoral Leadership Scholarship to have previously applied to the following two financial support programs.

(Those who are not eligible to apply and those who are unable to apply due to unavoidable circumstances are excluded.)

### Tokyo Tech New Financial Support Programs

- ① **Tokyo Tech Program for Development of Next-Generation Front-Runners with Comprehensive Knowledge and Humanity (Tokyo Tech SPRING)**  
<https://tokyotech-crossborder.gakumu.titech.ac.jp/topics/108438/>
- ② **Tokyo Tech Program for Development of Co-creative Experts towards Top-level AI Research (Tokyo Tech BOOST)**  
<https://tokyotech-crossborder.gakumu.titech.ac.jp/en/topics/108687/>

## Financial Support System for SSS students

01

### The SSS doctoral leadership scholarship (RA salary for doctoral students)

#### ■ Eligible students

WISE-SSS students with high research ability and outstanding potential

#### ■ Requirement

1. pass the mid-term review
2. apply for both **Tokyo Tech SPRING** and **Tokyo Tech BOOST** on the previous page

Note) Students who are not eligible to apply and those who are unable to apply due to unavoidable circumstances are excluded.

02

### Super Smart Society Incentive subsidy (RA salary for master's students)

An RA salary of up to 500,000 yen/year will be paid to excellent and promising master's students.

## Example of Financial support for SSS students

### Ph.D. Student A (Sufficient support)

**¥ 4.16 million**

Incl. Tokyo Tech SPRING : ¥ 2.16M (If adopted)  
SSS Collaborative Research RA : ¥2.0M (※)  
※Depends on the status of collaborative research in your laboratory)

The amount of support depends on RA salary and other scholarships received. For details, please refer to WISE-SSS Web page.

<https://www.wise-sss.titech.ac.jp/en/admissions/support/>

### Ph.D. Student B (Regular support)

**¥ 1.98 million**

Incl. SSS Doctoral Leadership Scholarship : ¥ 1.5M  
Tokyo Tech TSUBAME Scholarship : ¥ 0.48M

Please refer to the web page for information on support for those who do not receive financial support from TokyoTech SPRING or BOOST.

<https://www.wise-sss.titech.ac.jp/admissions/support/>

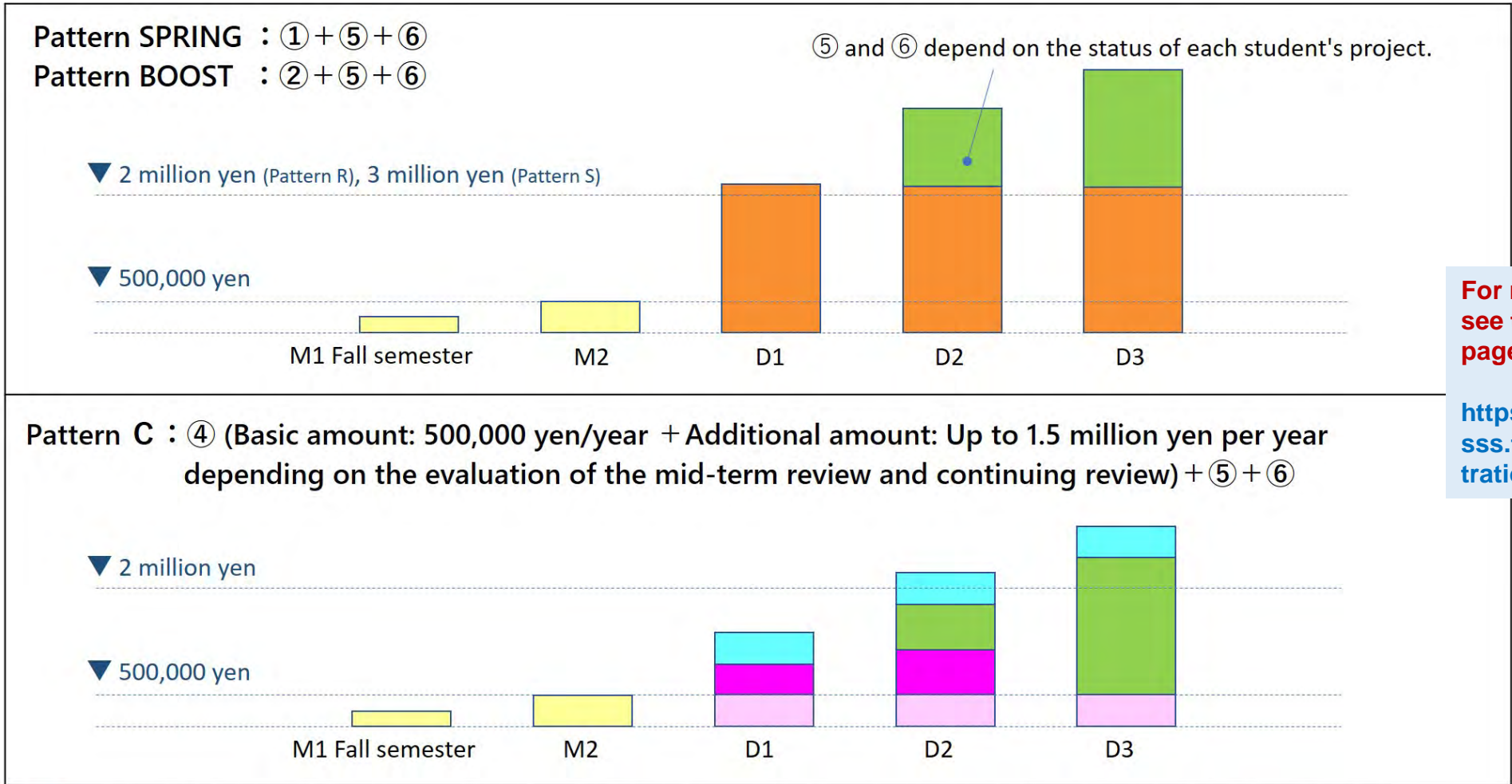
### Master's student

**¥ 0.5 million**

Incl. SSS Fundamental Technology Project Incentive : ¥ 0.5M



# Financial Support System for SSS Students



For more information, see the WISE-SSS Web page.  
<https://www.wise-sss.titech.ac.jp/en/registration/support/>

- ① Tokyo Tech Program for Development of Next-Generation Front-Runners with Comprehensive Knowledge and Humanity (Tokyo Tech SPRING),
- ② Tokyo Tech Program for Development of Co-creative Experts towards Top-level AI Research (Tokyo Tech BOOST)
- ④ SSS Doctoral Leadership Scholarship RA salary (Basic amount)
- ④ SSS Doctoral Leadership Scholarship RA salary (Additional amount)
- ⑤ SSS joint research RA salary, ⑥ SSS national project RA salary
- Tsubame Scholarship
- SSS Incentive Subsidy (for master's students)

※ ③ If you are receiving other financial support (government scholarships, private scholarships, etc.), please refer to the attached sheet.

# -5 Registration Guide

## Registration Requirements

There are 2 registration requirements for WISE-SSS

01

### Off Campus Project experience

For more information, see WISE-SSS Web page  
<https://www.wise-sss.titech.ac.jp/en/registration/application/>.

- Obtain 1 credit or more from the cyber/physical off-campus project courses designated by the Academy (details are on the next page).
- Or domestic/international internship, study abroad, work experience, etc.

02

### Participation in the SSS Matching Workshop

- Participate in one or more SSS Matching Workshop (the matching result is not mandatory).
- This academic year's workshop will be held on June. 5<sup>th</sup> and Dec. 4<sup>th</sup>.





## 01 Participation in an Internship

Internship experience at a company or a research institute.

You need to ask for the certificate of implementation of internship.

### Ways to prove the implementation of internship

- Credit of cyber/physical off-campus project courses designated by the Academy
- Credit of the internship subject at your original course
- Internship completion certificate from the institution that implemented the internship



**If you have questions, please contact the Office of Academy for SSS.**

[wise-sss@jim.titech.ac.jp](mailto:wise-sss@jim.titech.ac.jp)

I don't know if my external activity (including part-time job) is accepted as the requirement.

...or any other questions

I can't choose one from the necessary courses, or can't get the certificate before registration.



# 01 Participation in an Internship

Internship information by institutes participating in the SSS Promotion Consortium is provided on the following Website.

**How to Access (only within the university)** [www.wise-sss.titech.ac.jp/](http://www.wise-sss.titech.ac.jp/)



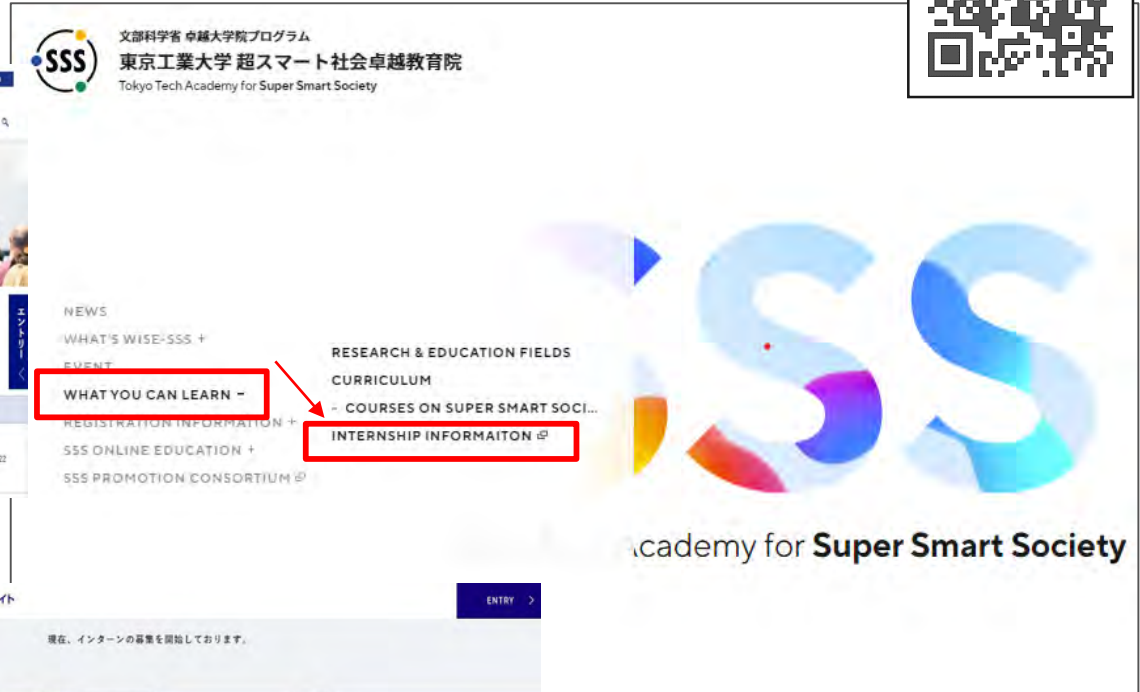
Past record of the companies who conducted internships and provided information



Case Study : NEC



Case Study : MIZUHO FT



# SSS Matching Workshop

Schedule

2024

## June. 5<sup>th</sup> Wed.

12:30-20:00

### TTF Kuramae Hall

Application

## Apply through the Website

(Make sure to get an approval from your supervisor)

Deadline

## May 10<sup>th</sup> Fri. noon

SSS 超スマート社会推進コンソーシアム TokyoTech Super Smart Society Promotion Consortium

SSS 超スマート社会卓越教育院 Tokyo Tech Academy for Super Smart Society

# SSS MATCHING WORKSHOP

2024 SPRING  
JUN 05

対面開催 東工大蔵前会館  
In-person Tokyo Tech Front



マッチングワークショップ実行委員会 matching\_ws-staff@sss.e.titech.ac.jp

コンソーシアム参加機関  
& 東工大生限定イベント

最先端の研究者とディスカッションするチャンス!  
Chance to discuss with cutting-edge researchers!

- **Seeds Round**  
Students will give a lightning talk (research introduction) and a panel exhibition will be held.
- **Needs Round**  
Participating partners will introduce their profile, and will display each activity with actual demonstration as well as poster presentations at individual booths.
- **Networking**  
All participants are invited to gather around tables with various technical themes and have discussions enjoying with some snacks.

2023 Participating Institutions 参加実績機関



If you have any questions regarding participation in the Matching Workshop, please contact the following:



## Inquiry on the Matching Workshop

Matching Workshop Executive Committee [matching\\_ws-staff@sss.e.titech.ac.jp](mailto:matching_ws-staff@sss.e.titech.ac.jp)





# Information on Registration

Period of application

**July 22 - August 6, 2024, at noon**  
(Please be punctual.)

How to apply

Upload to the Box.  
Application form and necessary documents (PDF file)

Application form

It will be posted on the WISE-SSS Website later.

Address of application

[wise-sss@jim.titech.ac.jp](mailto:wise-sss@jim.titech.ac.jp)



## Inquiry

If you are considering to register,  
please contact us:

**WISE-SSS Office**  
(South No.3 Bldg., Room 213)

✉ ▶ [wise-sss@jim.titech.ac.jp](mailto:wise-sss@jim.titech.ac.jp)

📞 ▶ 03-5734-3766



## Annual schedule

- SSS Course
- SSS Event

Year	Month	SSS Course/Event
2024	Apr.	<ul style="list-style-type: none"> <li>• Cyber/physical cross mentor allocation</li> <li>● Super Smart Society Innovation A5: Production Process Innovation (1Q)</li> </ul>
	May	
	June	<ul style="list-style-type: none"> <li>● SSS Matching Workshop (6/5)</li> <li>● Super Smart Society Innovation A4: Frontiers in Smart Workplaces (2Q)</li> </ul>
	July	
	Aug.	<ul style="list-style-type: none"> <li>• Completion Examination</li> <li>● Intensive Practice for Interdisciplinary Research Planning</li> </ul>
	Sept.	<ul style="list-style-type: none"> <li>• Mid-term Review</li> <li>● Intensive Practice for Interdisciplinary Research Planning</li> </ul>

Year	Month	SSS Course/Event
2024	Oct.	<ul style="list-style-type: none"> <li>● Smart Society Innovation A3: Frontiers in Smart Agriculture (3Q)</li> <li>● Ota City Start-Up Off-Campus Project (3Q)</li> <li>• Cyber/physical cross mentor allocation</li> <li>• Global mentor allocation</li> </ul>
	Nov.	<ul style="list-style-type: none"> <li>● Global Forum (Nov. 5)</li> <li>• Global mentoring (1)</li> </ul>
	Dec.	<ul style="list-style-type: none"> <li>● Smart Society Innovation A6: Smart Ocean(4Q)</li> <li>● SSS Matching Workshop (Dec. 4)</li> <li>• Global mentoring (2)</li> </ul>
2025	Jan.	
	Feb.	<ul style="list-style-type: none"> <li>• Completion Examination</li> </ul>
	Mar.	<ul style="list-style-type: none"> <li>• Mid-term Review</li> </ul>