2026

IPS
情報生産システム研究科
Graduate School of Information, Production and Systems

Graduate School of Information, Production and Systems, Waseda University

Dean, Graduate School of IPS
ARAKAWA, Masao

Join IPS

Waseda University Graduate School of Information, Production and Systems (IPS) was established in 2003 at Kitakyushu Science and Research Park in Hibikino. Waseda University's anthem includes the following verse:

Her students change from year to year,
Meet and part with youth's delight,
Yet all alike we seek to share
These ideals and their light

Just as the verse states, gifted students from around the world gather here, and our alumni have built successful careers in the leading manufacturers in Japan and academic institutions worldwide—testimony to IPS's rich global environment. IPS comprises three research fields: Information Architecture, which covers all aspects of telecommunications technology; Production Systems, which covers areas essential for production activities; and Integrated Systems, which covers a wide range of applied integrated systems and related foundational technologies. Under Waseda University's mission of Independence of Scholarship, IPS is dedicated to research that contributes to the world.

Kyushu is moving towards becoming a "New Silicon Island." To develop talent for Kyushu's semiconductor industry, IPS is working to contribute to the growth of the region by accepting an invitation from the Kitakyushu Foundation for the Advancement of Industry, Science and Technology (FAIS) to work with universities in Kitakyushu Science and Research Park and join the Joint Graduate School Intelligent Car, Robotics & AI.

In addition, the Information, Production and Systems Research Center (IPSRC), which is affiliated with IPS, offers the DX talent development program *AsianDX* through a consortium it operates. This consortium serves as a platform for open dialogue that connects the university with members of the local community. For matters related to *monozukuri* (manufacturing and production), we believe IPS can contribute from a wide range of perspectives. We warmly invite you to take part in these activities, and we will continue striving to grow and develop together with all of you.

You can check IPS's Educational Policy here.

Objectives for Human Resource Development and Education & Research

IPS aims to develop researchers and engineers who can solve increasingly complex technological problems and create new value by applying deep insight and advanced expertise in both real-world practice and academic research. IPS has three main research areas: Information Architecture, Production Systems, and Integrated Systems. Through education and research at IPS, students are expected to acquire strong fundamentals, applied skills, and specialized knowledge, as well as core competencies including information literacy and problem-identification skills, logical thinking and problem-solving abilities, and practical leadership and international communication skills. In Kitakyushu, where IPS is based, industries such as the automotive, robotics, and environmental technologies are expanding. By participating in joint research with companies and national projects, and by applying research outcomes in practice, students can experience the excitement of research and development. IPS will disseminate world-class research results from Kitakyushu.

Our Concept

Developing advanced engineers to lead global manufacturing
—from Kitakyushu

Think Global

A New Knowledge Hub Open to the Asia-Pacific Region

Economic globalization demands an approach to manufacturing that considers the whole world. IPS, as a state-of-the-art hub for education and research in the Asia-Pacific region, develops highly specialized engineers needed in a globalized era.

A Cosmopolitan Research Community with a Large International Student Population

Many international students from various countries in Asia and other regions are enrolled in IPS. It is a multicultural environment where interaction among people from different cultural and intellectual backgrounds naturally fosters an international perspective.

Research Exchange with Leading Overseas Universities, Research Institutes, and Industry

IPS actively promotes partnerships and research exchange with leading overseas universities, research institutes, and companies.

Act Local

Education and Research that Draw on Kitakyushu's Manufacturing Tradition

Kitakyushu City has a manufacturing tradition that goes back more than 100 years. More recently, the city has actively fostered the development of a state-of-the-art system LSI industry. IPS takes a distinctive approach to education and research by drawing on the advanced technologies and know-how accumulated in the region.

Developing Practice–Oriented Engineers through Industry Collaboration

The region's industries possess a wealth of talent and practical experience. IPS applies this know-how to practice-oriented education, while also offering continuing education programs that enable working professionals to move between industry and graduate study.

Industry–Academia–Government Collaboration to Create New Regional Industries

IPS feeds back its research outcomes to the region and contributes to the creation of new industries.

Contents

Key Features of the Graduate School of Information, Production and Systems (IPS) at Waseda University

The Graduate School of Information, Production and Systems (IPS) is a graduate school established by Waseda University in the Kitakyushu Science and Research Park. IPS integrates research, education, international collaboration, and regional collaboration to cultivate professionals capable of contributing to the solution of societal and industrial challenges.

Research

Conducting Cutting-Edge Research in an Internationally Engaged Environment

☐ Interdisciplinary Research Framework

Research at IPS is structured around three core fields: Information Architecture, Production Systems, and Integrated Systems. These fields are closely interconnected, enabling interdisciplinary and integrative research. While developing deep expertise in a specific field, students incorporate knowledge from related disciplines and address complex challenges in real-world contexts.

In addition, the Information, Production and Systems Research Center (IPSRC) is located on campus, and numerous practice-oriented research projects are conducted based at IPSRC in collaboration with industry and local governments. IPS offers a research environment that supports activities ranging from fundamental research to social implementation.

☐ A Hub for International Research Exchange: IPS International Collaboration Symposium (ISIPS)

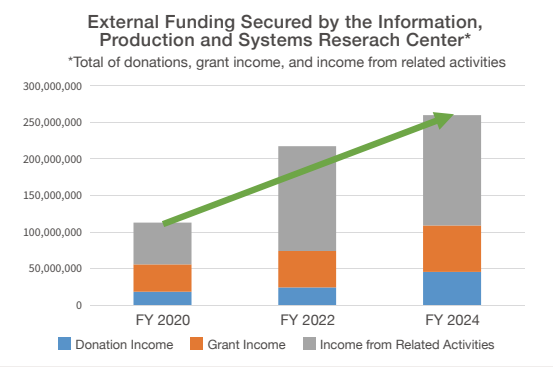
IPS hosts the IPS International Collaboration Symposium (ISIPS: International Collaboration Symposium on Information, Production and Systems) every year. ISIPS brings together researchers from around the world to present and discuss cutting-edge research outcomes centered on IPS's three core research fields.

More than a conventional international conference, ISIPS serves as a signature platform for IPS, aiming to foster new international collaborative research, provide a forum for early-career researchers and graduate students to disseminate their work internationally, and strengthen research networks with academic institutions worldwide For students, ISIPS offers a valuable opportunity to experience the forefront of global research and to share their own research with the international academic community.

☐ Presenting Research Outcomes on the International Stage

At IPS, students are strongly encouraged to present their research in English at international conferences. Through the experience of communicating their research outcomes to the global academic community, students develop not only advanced expertise but also international communication skills and a broader perspective as researchers.

In addition, by utilizing the Overseas Research Travel Grant Program, many students engage in research activities abroad, including presentations at international conferences and symposia as well as participation in international consortia. IPS actively provides opportunities for students to take their research onto the global stage.



ISIPS

Lab Introduction Video

Education

Educating Advanced Engineers with International Perspectives and Practical Skills

☐ An Interdisciplinary and Integrative Curriculum

IPS is composed of three fields—Information Architecture, Production Systems, and Integrated Systems—and offers education that spans both hardware and software domains. Students begin engaging in research at an early stage of their studies, deepening expertise within their primary field while freely selecting courses offered across all three fields to acquire interdisciplinary knowledge.

☐ Learning in English to Build Global Competence

At IPS, lectures and research supervision are conducted in both English and Japanese. In an environment where international and Japanese students study together, students develop international communication skills in addition to advanced technical knowledge. Through experiences such as presenting and discussing research outcomes in English, students build a solid foundation for becoming engineers and researchers who can thrive in a global context.

☐ Practice-Oriented Educational Programs in Collaboration with Other Universities and Industry

Leveraging the strengths of universities located in the Kitakyushu Science and Research Park, Kyushu Institute of Technology, The University of Kitakyushu, and Waseda University jointly develop educational programs in collaboration with one another. Through an inter-university credit transfer system, students are able to take specialized courses offered by each institution. In addition, IPS offers lectures taught by leading researchers and engineers from industry, as well as education that emphasizes exercises and hands-on training.

Awards & Honors (2020–2025)

Selected Major Awards

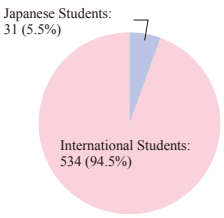
MEXT Young Scientists' Award
JSME Award & Fellow
IEEE Society Awards
Top 2% Scientists, etc.

Overall Achivements

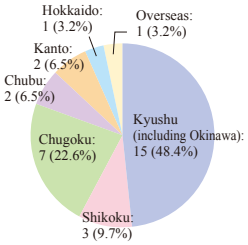
Domestic: 24　International: 46

Overview of IPS Student Composition

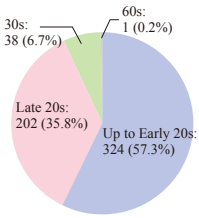
<As of November 1, 2025>



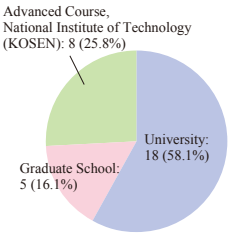
By Country/Region



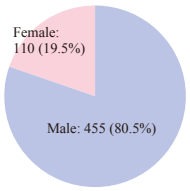
Place of Origin (Japanese Students)



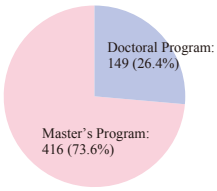
By Age Group



Previous School Type (Japanese Students)



By Gender



By Program

Regional Collaboration

Connecting with Society in a Concentration of Industry and Research

Kitakyushu: A City Open to Asia and Industry

Kitakyushu is located close to East Asian countries and has fostered international exchange with these countries over many years. It also possesses a strong technological and industrial foundation developed as one of Japan's leading industrial regions, giving it significant potential as a base for education and research in the fields of information, production, and systems.

With the aim of establishing a hub for knowledge dissemination with a broad perspective on Asia, Waseda University expanded into the Kitakyushu Science and Research Park. Taking advantage of this location, IPS promotes education and research closely connected with society and industry.

Kitakyushu Science and Research Park: A Hub for Universities, Research Institutions and Industry

The Kitakyushu Science and Research Park is designed as a research and development hub where universities, research institutions, and companies are concentrated to promote joint research and industry–academia collaboration. Multiple universities and graduate schools, including Waseda University, share the same campus, enabling collaboration that transcends disciplinary and organizational boundaries.

Within this environment where people and knowledge come together, students and researchers can engage in daily interaction and deepen their learning. In the campus, a dedicated communication space, HIBIKINO ODORIVA, has been established to encourage casual interaction among students and researchers, fostering connections that go beyond institutional boundaries. In addition, a range of support programs—including scholarship opportunities for international graduate students enrolled in the Science and Research Park , as well as the provision of student housing—facilitate the learning of students from diverse backgrounds.

Co-Creation through an Industry–Academia Consortium

Through the Waseda University IPS–Kitakyushu Consortium, IPS has established a collaborative framework that brings together industry, universities, and the local community. The consortium continuously promotes joint research and research and development projects, while also advancing education and research rooted in real-world practice through initiatives such as the appointment of industry–academia collaborative faculty and the shared use of research spaces.

Joint Graduate School
Intelligent Car,Robotics & AI

HIBIKINO ODORIVA

Career Development

Waseda's Proven Career Outcomes

Support Systems for Employment in Japanese Companies

For students seeking employment in Japan, the Kitakyushu Foundation for the Advancement of Industry, Science and Technology (FAIS) offers a career support program for international students. This program provides guidance on job hunting in Japan, interview preparation, and Japanese language courses focused on job searching, designed to help students acquire the language skills necessary to secure employment with Japanese companies. Through these initiatives, the program supports international students in navigating the Japanese job market smoothly and effectively.

Career Support through Japanese Language Education

In addition to the above initiatives, Japanese language courses for international students are offered across the Kitakyushu Science and Research Park, and IPS also provides its own Japanese language education programs. By supporting the development of Japanese language proficiency needed for research activities, daily life, and job hunting, these initiatives help international students pursue a wide range of career paths.

Tipical Timetable for Job-Hunting in Japan for Students Enrolling in Sep. 2027

Timeframe	Job-Hunting Activities
Sep.2027-Feb.2029	Preparation & information gathering
Aug. 2028	Internship
Mar.2029	Start job hunting (Career seminars, company information sessions)
Jun.2029	Employment exams
Oct.2029	Receive job offer
Oct. 2029 or Apr. 2030	Start your employment

Major Employers in Japan for International Graduates (2021-2025)

Electronics & Precision Equipment

Sony
Panasonic
Hitachi
Ricoh
Konica Minolta
Sharp
Shimadzu
Suruga Seiki
Nichicon
Renesas Electronics
ROHM
Micron Memory Japan
HGST Japan
Western Digital Technologies
PHC
Sanko Electric
Yokogawa Electric
Yokogawa Manufacturing

Information & Communication Services

Fujitsu
NTT DATA
NEC
Rakuten Group
LINE Corporation
Accenture
Avanade
Simplex Holdings
SOLIZE Holdings
NTT WEST
DMM.make
Persol Cross Technology
Sales Marker
ENEOS Systems
E-Business
I. Meisters
SOHOBB
New Concept
Toshiba Digital Solutions
IBM Japan
B.B. Studio

Automobiles & Transportation Equipment

Honda
Nissan
Mazda
Daihatsu
Bosch
Aisin Software
Hitachi Astemo
Panasonic Automotive Systems
Toyota
Boshoku
UD Trucks

Machinery

Organo
Japan Automatic Machine
Hitachi Nico Transmission
Hirate Technical

Steel & Nonferrous Metals

Ahresty
Mino Industry

Banking

Sony Bank

Construction & Materials

TOTO

*Company names are as of the time of employment.

The three fields of IPS

IPS comprises the three fields of Information Architect
fields. Moreover, we provide lectures that encompass
with a generalist's perspective. We also accept a wide

I Information Architecture

Designing new uses of information,
from media to management engineering.

Features of the Information Architecture field

Coverage of the information science and technology spanning big data processing, communications, and sensors.

Education of state-of-the-art theories and applications of information and AI technologies, with emphasis on academic-industrial cooperation.

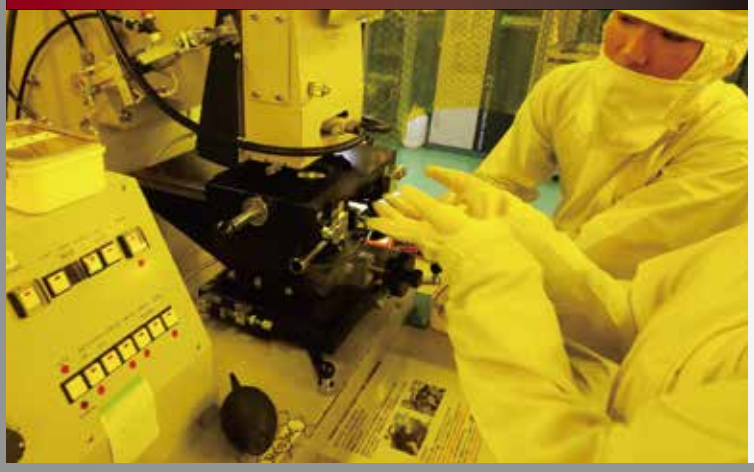
Career development support assuming various students from different backgrounds, and that supports the development of a wide range of careers.

Research Area

●Information and communication model ●Computational intelligence
●Language and media information ●Social and management informatics
●Robotics & mechatronics ●Information Sensing

P Production Systems

Creation of innovative values through
new production technologies.



Features of the Production Systems field

Covering all essential domains for productive activity from development to materials, assembly/manufacture, measurement, control, diagnosis, logistics, and management.

Training researchers and highly skilled engineers to meet the challenges of a globalized manufacturing industry in Asia and the world.

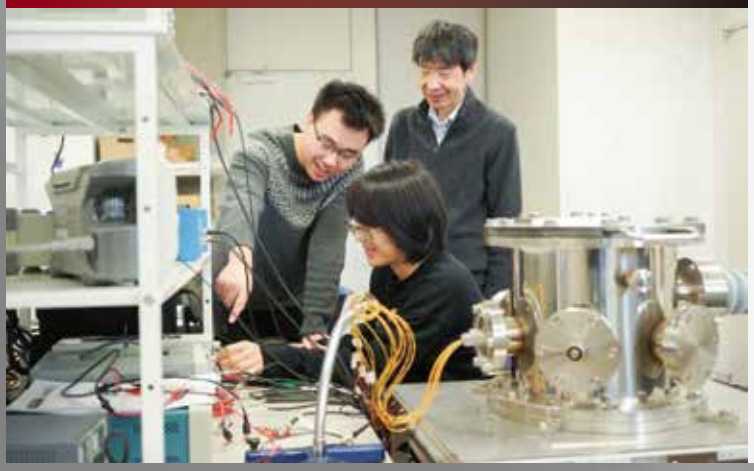
Education and research with full coverage of both software and hardware in a practical ambiance.

Research Area

●Machine design and Robotics
●Sensor, Advanced materials, and Applied measurement
●Healthmonitoring system ●Intelligent and Process Control system
●Process monitoring and Equipment management ●Automotive Powertrain

S Integrated Systems

Creating innovative integrated systems
with leading-edge technologies.



Features of the Integrated Systems field

Our research areas cover a wide range of integrated system applications and their fundamental technologies.

Faculty members, mostly from top companies, conduct practical research and education with strong ties to industry.

Developing global human resources in a wide range of fields, from cutting-edge companies to academia.

Research Area

●High-speed and Low-power IC ●Acoustic and Image Information
●Analog and High-frequency Circuits
●Optical/Terahertz Integrated Circuits ●MEMS Sensor
●System Optimization and Verification

ure, Production Systems, and Integrated Systems, giving you broad, interconnected coverage of both software and hardware across
expertise in both state-of-the-art technology and management, enabling you to become a technologically well-informed specialist
range of mid-career students.

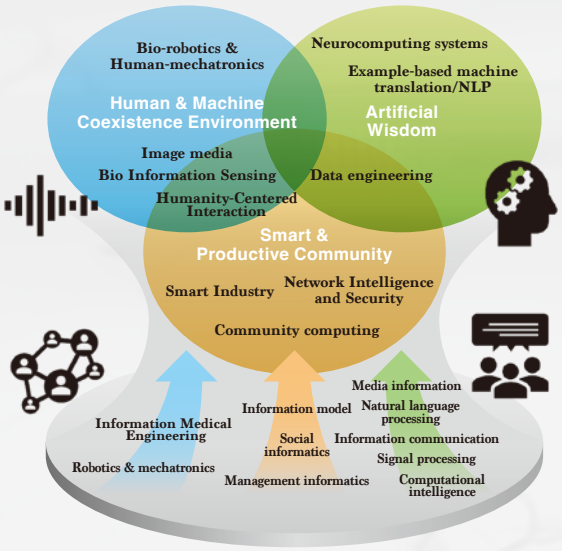
Education system for multidisciplinary skills

Curriculum covering from fundamental knowledge to cutting-edge applications
Exercises nurturing applicable knowledge

- Deep learning
- Data science
- Natural language processing
- Media understanding and applications
- Communication and network
- Human interaction

Education open to society, paving the way for Society 5.0

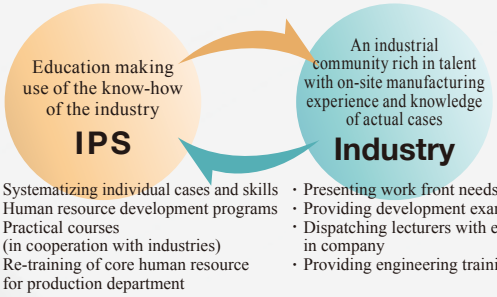
Together with technical expertise, we aim to cultivate the abilities of co-creation and having a bird's-eye perspective that are necessary to thrive in the society of the future.



Information and technologies encircling smart society

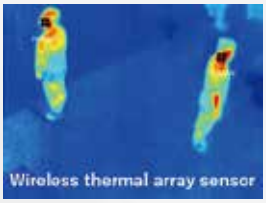
Safe and secure society and comfortable environment comprised of human, information and things. The information architecture field is tackling research on information and system technologies in wide spectrum and its application, which support upcoming smart society

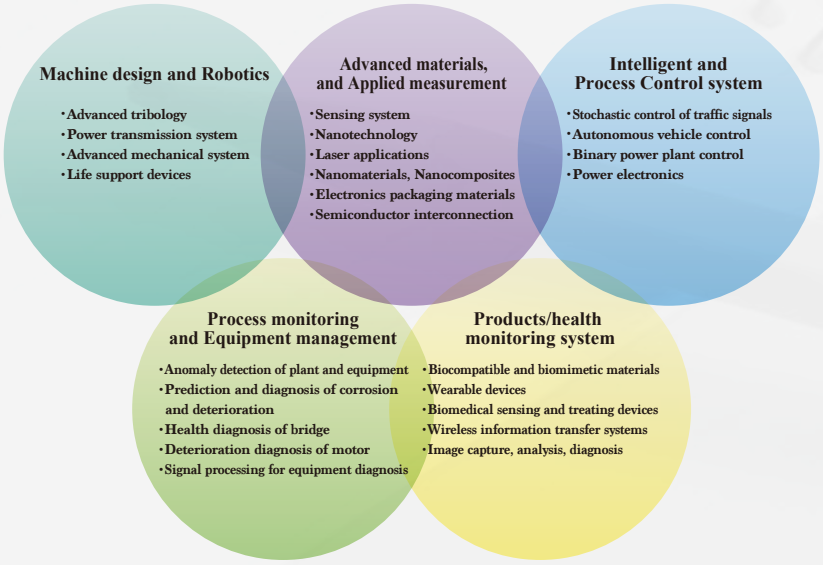
Cooperation with domestic industries



- Systematizing individual cases and skills
- Human resource development programs
- Practical courses (in cooperation with industries)
- Re-training of core human resource for production department

- Presenting work front needs
- Providing development example
- Dispatching lecturers with experience in company
- Providing engineering training site





Distinctive features of the educational program

Systematic Educational Course

- Both Hardware and Software for SoC
- Fundamental and Advanced Courses on Algorithms and Software

Education on SoC Design

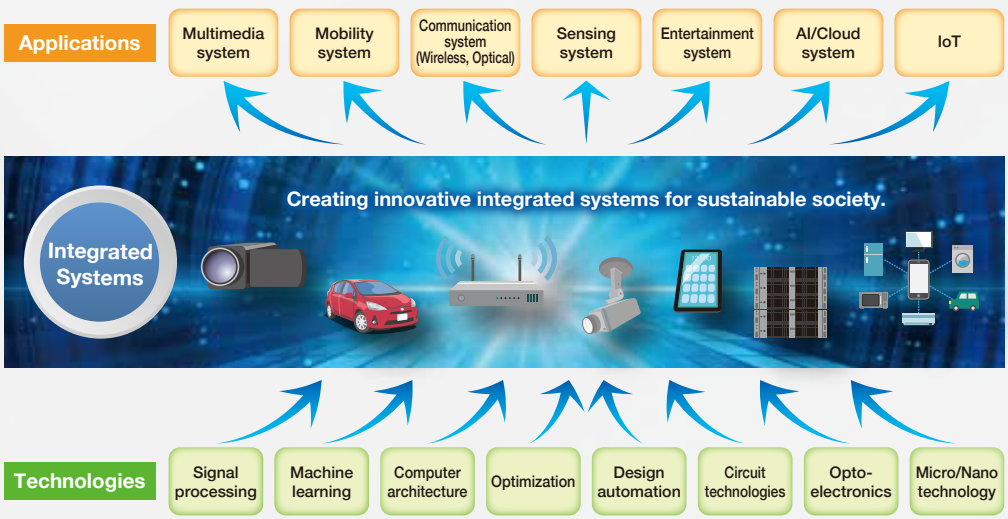
- FPGA Implementation
- Chip Design and Evaluation
- Application to Communication/Image /Acoustic systems

Education on Hybrid Multifunctional Integrated Circuits

- MEMS
- Opto-electronic Integrated Circuits
- Terahertz Application Systems

Collaboration with Industries and Academic Associations

- Joint research with Companies or Organizations of Electronics, Communication, Semiconductor, Automotive, etc.
- Research cooperation with top grade universities and academic associations inside and outside Japan.



Research at IPS | Information Architecture Field

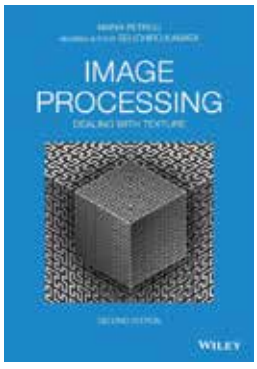
Image Media Lab. (KAMATA Sei-ichiro Lab.)

"Just a Curve, But Still Useful!" —Implementing Image Processing Technology into Society

In Information Architecture, students design new ways to use information—in everything from media to engineering management. Covering all aspects of telecommunications technology from information sensing to transmission, analysis, and decision-making, Information Architecture instructs students in the theory and application of information and AI technology with the aim of producing graduates with advanced tech skills through research that focuses on industry-academia partnerships. It also helps build a wide range of careers thanks to educational methodology that also considers those who have transferred from fields other than science and technology. Research interests of the teaching staff cover a wide range of the field of information: the Smart & Productive Community Group covers smart industry, community computing, and network intelligence and security; the Artificial Wisdom Group covers neurocomputing, example-based translation and language processing, and data engineering; and the Human & Machine Coexistence Environment Group covers biorobotics and human mechatronics, image media, bioinformation sensing, and optic fiber systems. The labs at IPS have been actively researching these areas, and this lab has been conducting image media research since 2003.

Famous book *Kaiseki Gairon* ["Introduction to Analysis"] (Iwanami Shoten, 1961) written by Teiji Takagi (Professor Emeritus, The University of Tokyo) contains a line about curves: "Curves like this are bothersome." He was referring to a "space-filling curve," a single curve that completely fills a two-dimensional plane or higher dimensional region of three or more dimensions. Well-known mathematicians such as G. Peano, D. Hilbert, G. Cantor, and W. Sierpiński have published papers on various types of space-filling curves like the Peano curve, Hilbert curve, and Sierpiński curve since the 1890s. When reading the original papers published over a century ago (they were not written in English: the papers on the Peano and Sierpiński curves are in French and the Hilbert curve in German), it is very interesting to see how the mathematicians produced the curves and their thought process. These curves have been used in a wide range of applied research including data compression, image processing, and information searching. For over 40 years, this lab has been conducting research on the theme of image processing and pattern recognition, and working to develop a unique image processing algorithm that focuses on space-filling curves. In the 1990s the lab conducted a joint research project on curves with the late Maria Petrou (professor at Imperial College London)—a world-famous researcher in image processing and pattern recognition and other fields—in which we researched applications for various curves. Unfortunately, she passed away in 2012, halfway through the project. After that the book *Image Processing: Dealing With Texture* (Wiley, 2021) was published, in accordance with her wishes. The figure below is a three-dimensional space-filling curve created by D. Hilbert with 3D graphic tools. As you can see, it is a tricky nowhere-differentiable curve.

The lab welcome students who are interested in math. Image media is a field of research that came about when considering how curves could benefit society in researching curve theory simply for the love of math. This lab's keywords are "Just a Curve, But Still Useful!" It is our hope that mathematically tricky curves will be able to benefit society. We continue to be a lab that uses mathematical concepts such as curves to implement technology that is beneficial to society.



Research at IPS | Production Systems Field

Intelligent Semiconductor Engineering Lab. (UEDA Kenji Lab.)

Striving to create innovative new materials and devices with film growth technology

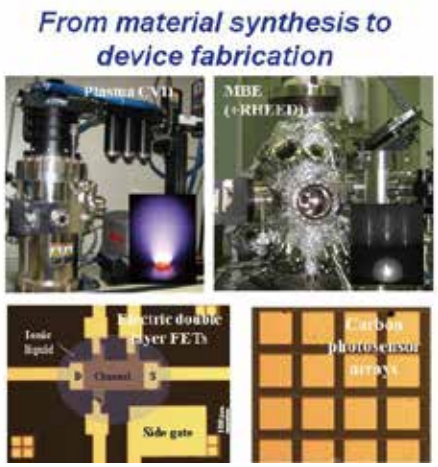
Intelligent Semiconductor Engineering Lab (Ueda Lab) is a relatively new lab that started in 2022. The head of the lab is Kenji Ueda. He obtained his Doctor of Science degree from Osaka University. Ueda began conducting research on thin film materials and devices in his doctoral program and has been working in the field for nearly 30 years.

Ueda Lab is equipped with a diverse range of deposition equipment (plasma chemical vapor deposition [CVD]), molecular beam epitaxy [MBE], and sputtering equipment) and features an environment that enables the thinning of a wide range of materials. Electronic devices today are made by thinning and layering a variety of materials. This lab has produced a range of devices such as a field effect transistor (FET) and optical sensor array by forming film with the above equipment and microfabrication. One of our lab's main selling points is that we produce high-performance devices with new functions by thinning target materials and enhancing their quality as much as possible; in other words, we produce innovative devices by carrying out the entire process from material synthesis to device production.

Recently our lab has been focusing efforts on making high-performance devices with new functions by using diamond semiconductors and carbon materials such as graphene based on semiconductor engineering. Students of this lab gain the skills to carry out the front-end process of semiconductor manufacturing—in other words deposition and microfabrication (e.g., lithography, etching)—and evaluate electronic properties of electronic devices such as FET and diodes by themselves, so they are able to immediately apply their skills at semiconductor material and device manufacturers.

The lab currently conducts research focusing on two main themes: (1) Developing high-performance power devices that use diamond semiconductors and (2) searching for new functions and researching device applications with diamond semiconductors and graphene interfaces (with a focus on developing new optical sensors that mimic brain functions). With regard to (1), we are developing high-performance vertical FET in a joint research project with Power Diamond Systems, Inc. and the Kyushu Institute of Technology as part of a national NEDO leading research program since fiscal 2024 and are tirelessly conducting research to develop practical diamond vertical power FET.

Our lab's research mainly focuses on film growth, new material development, and device production. Come visit us if you are interested. We are always looking for students who want to create new materials and devices by themselves or are interested in nanotechnology. Come research with us!



The laboratory's film deposition equipment (top right, top left) and examples of fabricated devices (bottom right, bottom left).

Research at IPS | Integrated Systems Field

Integrated System Optimization Lab. (YAMASAKI Shintaro Lab.)

Aim to create high-performance structures that go beyond the limit of human thinking by the combination of mathematics, physics, and computers

In the integrated systems field, there are a number of laboratories engaged in cutting-edge research domains under the keyword “integrated systems”. For example, some laboratories focus on research related to semiconductor devices, such as integrated circuits, optical semiconductors, and MEMS, others focus on research related to image processing, audio signal processing, and terahertz wave applications.

Here, I will introduce the Integrated Systems Optimization Laboratory (hereafter, Yamasaki Lab), one of the laboratories in the integrated systems field. Yamasaki Lab was established in the Graduate School of Information, Production and Systems in April 2022. Yamasaki Lab promotes basic and applied researches on the optimal design of integrated systems in abroad sense.

Optimal design is activities on formulating the followings for a real-world design problem:

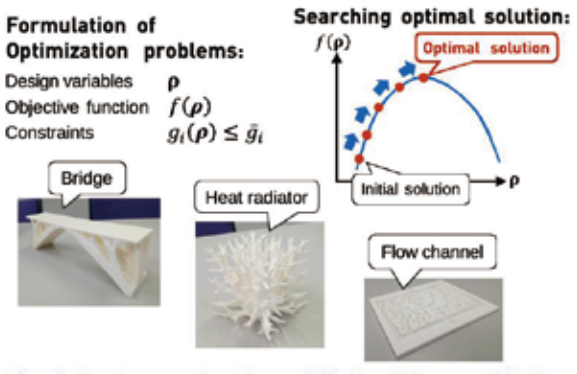
- Design variables - Design factors that can be determined by the designer
- Objective function - An evaluation index of the design target that should be maximized or minimized
- Constraints - Conditions that the design target must satisfy

and deriving its optimal (or locally optimal) design solution by using mathematical programming, meta-heuristics, and so on. The figure illustrates the process of searching for the optimal solution based on the sensitivity information, which represents one of the simplest types of optimal solution search.

For optimal design problems with a small number of design variables, that is, with a small degree of design freedom, it is possible to obtain the optimal or quasi-optimal solution based on human intuition and experience. However, as the degree of design freedom increases, obtaining the optimal solution through intuition and experience becomes extremely difficult. For example, the figure shows the optimal structures of a bridge, a heat radiator, and an electrolyte flow channel. Here, a structural design methodology called topology optimization is used to search for solutions with hundreds of thousands of design degrees of freedom. In all cases, extremely complex optimal structures, similar the morphology of living things, are obtained. However, it would be difficult for most people to derive these structures based solely on intuition or experience. In the past, solving structural optimization problems with a large degree of design freedom was challenging. However, advancements in computational mechanics, physics-based simulations, and the increasing performance of computers have made it possible to obtain unique optimal structures, such as those shown in the figure.

Physics-based simulations easily confirm that the three optimal structures shown in the figure demonstrate high performance. However, manufacturing such complex optimal structures has historically been challenging, posing a major issue in structural optimization. Recent advancements in additive manufacturing technology are now addressing this challenge. The structures shown in the figure are prototypes made from a plastic resin called PLA. Additionally, as additive manufacturing technology continues to advance, the range of usable materials is expanding significantly, bringing the innovation on products by the structural optimization closer to reality.

In today's world of global competition, products are required to be optimal, and optimal design that goes beyond the limits of human thinking can be a powerful tool. I look forward to receiving applications from students who try to change the world through structural optimization.



Optimal structures going beyond limits of human thinking
Realization by additive manufacturing

Faculty Profiles

Faculty

● Information Architecture Field

※Scan the QR cords below to watch each lab's introduction video.

Professor
FUJIMURA, Shigeru
Dr. of Engineering
(Waseda University)

【Research Guidance】
Smart Industry

【Research Area】
Smart Industry, Digital Transformation
Production Management, Planning and Scheduling
Digital Ecosystems

【Message】
I will provide a laboratory atmosphere where you can discuss your own ideas with the other members and encourage each other to improve them. Promote new research on your own, experience the thrill of research firsthand, and conduct research that is beneficial to our society.

Web http://www.smartindustry.jp/

Professor
LEPAGE, Yves
Dr. Hab
(Grenoble University)

【Research Guidance】
Example-Based Machine Translation/NLP

【Research Area】
Machine Translation
Natural Language Processing
Learning by Examples, Example-based Methods
Differences and Similarity, Analogy

【Message】
Language is still a new frontier for revolutionary ideas. Experience research in a friendly atmosphere open to original opinions.

Web http://lepage-lab.ips.waseda.ac.jp/

Professor
FURUZUKI, Takayuki
Dr. of Information Engineering
(Kyushu Institute of Technology)

【Research Guidance】
Neurocomputing Systems

【Research Area】
Computational Intelligence
Deep Learning and Applications
SVM and Kernel Function Learning
System Modeling and Identification
Bioinformatics

【Message】
Guys who are interested in artificial intelligence, let's study together!

Web https://nclab.w.waseda.jp/nclab/

Professor
MATSUMARU, Takafumi
Dr. of Engineering
(Waseda University)

【Research Guidance】
Bio-Robotics & Human-Mechatronics

【Research Area】
Robotics / Mechatronics and its applications
Human-Robot Interaction (physical and informative)
Personal Robot, Partner Robot, My Robot
Human-Synergetic Robot, Human-Symbiotic Robot
Robotic Sensing and Control (incl. Machine Learning)
Measurement and Analysis of Human Movements

【Message】
Let's grow up together developing a new field at the meeting ground for people who have a new way of thinking and extraordinary abilities regardless of areas or aspects.

Web https://sem-matsumaru.w.waseda.jp/
https://matsumaru.w.waseda.jp/

Professor
IWAIHARA, Mizuho
Dr. of Engineering
(Kyushu University)

【Research Guidance】
Data Engineering

【Research Area】
Database Query Processing
Web Information Systems
Text Mining
Knowledge Engineering
Social Media

【Message】
Mountaineering, fishing, and etc. are my favorites, and loving the nature.

Web http://www.iwaihara-lab.org/pub/

Professor
YOSHIE, Osamu
Dr. of Engineering
(Waseda University)

【Research Guidance】
Community Computing

【Research Area】
Virtual Community
Agent
Multi-player Interaction
eMaintenance
Consensus Building Process
Knowledge Logistics

【Message】
God made the country, and man made the town.

Professor
KAMATA, Sei-ichiro
Dr. of Engineering
(Kyushu Institute of Technology)

【Research Guidance】
Image Media

【Research Area】
Image Processing
Pattern Recognition
Biometrics
Image Database
Space Filling Curves and Fractals

【Message】
Nothing is as valuable as image. One of my hobbies is listening to BGM, and I have now more than 400 CD's and LP's.

Web https://sem-kamlabo011.w.waseda.jp/

Professor
WU, Jun
Dr. of Science in Global Information and Telecommunication Studies
(Waseda University)

【Research Guidance】
Network Intelligence and Security

【Research Area】
Network Intelligence
Network Security
Application and System Development of Intelligent Security

【Message】
Let's make the networks smarter and securer!

Professor
KAMEOKA, Jun
Ph.D
(Cornell University)

【Research Guidance】
Bio Information Sensing

【Research Area】
Biosensor
IOMT
Wearable sensor

【Message】
I love lure fishing. Lets' research on new biosensor system.

Associate Professor
IEIRI, Yuya
Dr. of Engineering
(Waseda University)

【Research Guidance】
Humanity-Centered Interaction

【Research Area】
Social Informatics
Human-Computer Interaction
Agent-Based Simulation
Decision Support Systems

【Message】
A journey of a thousand miles begins with a single step. Let's study together and start a step towards your goals.

◀ For research inquiries or contacting faculty, please visit here and email the listed address on each faculty page.

● Production Systems Field

※Scan the QR cords below to watch each lab's introduction video.

Professor
ARAKAWA, Masao
Dr. of Engineering
(Waseda University)

【Research Guidance】
Design Engineering and System

【Research Area】
Design Engineering
Multi-Objective Optimization
Design Thinking
Diagnosis

【Message】
Multi-Objective optimization (MO) is doors for any fields. You can find new ways to be applied, when you join in new projects. Let's enjoy with MO.

Professor
HASHIMOTO, Kenji
Dr. of Engineering
(Waseda University)

【Research Guidance】
Mobile Robotics Platform

【Research Area】
Autonomous Mobile System
Humanoid Robot
Next-generation Mobility
System Integration

【Message】
Let's develop practical robot systems together to solve social issues. Through the development, cultivate your engineering sense, design skills, and problem finding and solving ability.

Web https://hashimoto-lab.jp/en/

Professor
MAWATARI, Kazuma
Dr. of Engineering
(University of Tokyo)

【Research Guidance】
Micro and Nano Fluidic Device

【Research Area】
Micro and nano fluidic device
Nano solution chemistry
Ultrasensitive chemical and bio sensing
Laser spectroscopy
Software (control, signal processing, AI, system, etc.)
Social implementation

【Message】
The students and researchers from various research fields are welcomed because of the multidisciplinary characteristic of the micro and nano fluidic research.

Web https://mawatari-lab.w.waseda.jp/

Professor
MIYAKE, Takeo
Dr. of Engineering
(Waseda University)

【Research Guidance】
Bioiontronics

【Research Area】
Bioiontronics
Biofuel cell system
Wearable device
Implantable device

【Message】
My hobbies are soccer, snowboard and BBQ. If you like this, we will enjoy university life together. My research focus is on safe and soft bioelectronics for seamless interfaces between devices and humans. If you are interested in this field, let's work together.

Web https://miyake.w.waseda.jp/

Professor
TANAKA, Eiichiro
Dr. of Engineering
(Tokyo Institute of Technology)

【Research Guidance】
Mechanical System Design

【Research Area】
Machine Design
Mechanisms
Machine Elements
Assistive Engineering

【Message】
I'd like to create useful machines using various mechanisms. Let's study together.

Web https://tanakae.w.waseda.jp/index.html

Professor
TATENO, Shigeyuki
Dr. of Engineering
(Kyushu University)

【Research Guidance】
Production Process

【Research Area】
Production Process
Simulation Techniques
Reliability Engineering
Information and Production Process

【Message】
In my free time, I like to build custom personal computers.

Web https://tateno.w.waseda.jp/

Professor
UEDA, Kenji
Dr. of Science
(Osaka University)

【Research Guidance】
Intelligent Semiconductor Engineering

【Research Area】
Electronic functional materials
Thin film growth
Carbon electronics
AI electronics

【Message】
We have been trying fabricating novel functional materials by using thin film growth technique. Please visit our laboratory if you are interested in creating novel materials or the world of nanotechnology.

Web https://k-ueda.w.waseda.jp/index-E.html

Professor
SHIMURA, Takayoshi
Dr. of Engineering
(Nagoya University)

【Research Guidance】
Semiconductor Materials and Device Engineering

【Research Area】
Semiconductor device and materials engineering
Advanced material analysis using synchrotron radiation
Band engineering of Group IV semiconductor materials
Nano X-ray diffraction

【Message】
Japan is promoting projects to revive its semiconductor industry. Would you like to learn about semiconductor? Let's enjoy the attraction and mystery of semiconductor.

Web https://shimura-lab.w.waseda.jp/

Professor
TAKAHASHI, Junko
Dr. of Engineering
(Tohoku University)

【Research Guidance】
Biomedical Engineering

【Research Area】
Biomedical Engineering
Biological Information Analysis
Medical Device Technology
Radiodynamic Therapy
Photodynamic Therapy

【Message】
Engineering way of thinking is critical for understanding of the living organisms and progress of the medicine. Let's study and work together on unmet medical needs that have not been satisfied yet.

Associate Professor
YAMAGUCHI, Kyohei
Dr. of Engineering
(Waseda University)

【Research Guidance】
Powertrain System

【Research Area】
Engine Combustion
Exhaust Gas Aftertreatment system
Hybrid System
Exhaust Gas Measurement
Performance Evaluation During Real Driving

【Message】
Let's research together to achieve further reductions in fuel consumption and exhaust emissions for powertrain systems, while envisioning the significant changes that automobiles will undergo towards 2030 and 2050.

Assistant Professor
MÉHES, Gábor
Dr. of Engineering
(Kyushu University)

【Research Area】
Organic Electronics and Photonics
Advanced Materials and Devices
Microbial Electrochemical Systems
Bacterial Electronics

【Message】
I was lucky to experience the largest and leading labs in several countries and also industry. I invite you to work and grow with me in a respectful atmosphere. For hobbies I enjoy doing aikido, kickboxing, biking, hiking, drinking tea, etc.

For research inquiries or contacting faculty, please visit here and email the listed address on each faculty page. ▶

● Integrated Systems Field

※Scan the QR cords below to watch each lab's introduction video.

Professor
IKEHASHI, Tamio
Dr. of Science
(University of Tokyo)

【Research Guidance】
Micro Electro-Mechanical Systems

【Research Area】
MEMS sensors
(gravimeters, seismometers,
mode-localized sensors, vibrometers, gyros)
MEMS actuators
MEMS applications systems

【Message】
Let's research together on MEMS, which are applied in various sensors and actuators. My hobby is running and driving.

Professor
IKENAGA, Takeshi
Dr. of Information & Computer Science
(Waseda University)

【Research Guidance】
Image Information Systems

【Research Area】
Video compression System
Video recognition System
Video communication System
Digital signal processing LSI

【Message】
I'm supporter of the Waseda rugby football team. I hope they will win the championship this year!

Web https://sem-ikenaga.w.waseda.jp/pageEg.htm

Professor
KAKITSUKA, Takaaki
Dr. of Engineering
(Kyushu University)

【Research Guidance】
Light Emitting Systems

【Research Area】
Semiconductor Lasers and Light Emitting Devices
Optical Circuit Design
Nanophotonics
Optical Signal Processing

【Message】
We are studying semiconductor lasers and their information communication applications. Photonics is a creative research area advancing in various fields. Let's create "shining" technologies together!

Professor
KIMURA, Shinji
Dr. of Engineering
(Kyoto University)

【Research Guidance】
High-Level Verification Technologies

【Research Area】
High-level Design and Verification
Application Specific High-level Synthesis
Hardware/Software Codesign
Dependable Computing

【Message】
I like to read books, especially mysteries. I would like to do the research and education with kindness, politeness and thoughtfulness.

Web https://shinji-kimura.w.waseda.jp/index.html

Professor
MAKINO, Shoji
Dr. of Engineering
(Tohoku University)

【Research Guidance】
Intelligent Acoustic Systems

【Research Area】
Blind Source Separation
Speech Enhancement
Acoustic Scene Analysis
Acoustic Signal Processing

【Message】
Challenge to submit your results to international conferences, discuss with your friends in the world, and enjoy your research activity!
My hobbies include walking, traveling, skiing, and diving.

Professor
TAKAHATA, Kiyoto
Dr. of Engineering
(Tokyo Institute of Technology)

【Research Guidance】
Opto-Electronic Integrated Systems

【Research Area】
Opto-Electronic Integrated Circuits
Optical Semiconductor Devices
Silicon Photonics
Microwave Photonics

【Message】
Opto-electronic integration, which combines photonics and electronics, is one of key technologies for Super Smart Society. Let's study together on new devices and systems for a future society.
I like playing sports and traveling.

Professor
TANZAWA, Toru
Dr. of Engineering
(University of Tokyo)

【Research Guidance】
Green Integrated Systems

【Research Area】
Energy harvesting technology
Semiconductor memory system
Analog circuit system
power conversion system

【Message】
Let's enjoy imagining circuit operation in a physical sense, quantifying characteristics with mathematical sense, and contemplating the greening of the system through overall optimization.

Web https://tanzawa-lab.w.waseda.jp/

Professor
YAMASAKI, Shintaro
Dr. of Engineering
(Kyoto University)

【Research Guidance】
Integrated System Optimization

【Research Area】
Optimal design
Integrated systems
Mobility
Machine learning

【Message】
I learned the actual manufacturing of integrated devices at a company and have been engaged in research on optimization at a university. Optimization of integrated systems has the potential to bring various innovations in society. I am looking for people to work together on research that will change the world.

Web https://yamasaki.w.waseda.jp/index-en.html

Professor
YOSHIMASU, Toshihiko
Dr. of Philosophy
(Kobe University)

【Research Guidance】
Wireless Communication Circuits Technologies

【Research Area】
High Frequency IC(RFIC) Design Methodology
Analogue IC Design Methodology
High Frequency Device Modeling and Measurement Technique

【Message】
Microwave has widely come into our life. Why do not you have an interest in microwave ICs?

Associate Professor
SERITA, Kazunori
Dr. of Engineering
(Osaka University)

【Research Guidance】
Terahertz Integrated Systems

【Research Area】
Terahertz
Nonlinear optics
Electromagnetic field analysis
Metamaterials

【Message】
Terahertz waves are unexplored electromagnetic waves, and the possibilities for future communication and sensing technologies are expanding. Let's explore this field together.

● Common Field

Guest Professor
FUJINO, Naoaki

【Research Area】
Industrial Policy
Operations Management
Supply Chain Management
Physical Internet
DX(Digital Transformation)

【Message】
The progress of information technology and the high economic growth of emerging markets have impacted significantly on business strategies. The system of systems becomes indispensable with individual systems interlinked. Industrial structures, business models and innovation models are required to change.
I invite you to discuss together, those who want to be entrepreneurs, managers or consultants, and those who wish to gain an overview of science, technology and society.

Web https://www.nri.com/en/people/lst/iis/fujino

◀ For research inquiries or contacting faculty, please visit here and email the listed address on each faculty page.

Student Voices

Student Messages

FUKIMBARA, Riko

Graduated from Waseda University
Master's Program, enrolled April 2026
Bio-Robotics & Human Mechatronics Lab (Matsumaru Lab)

IPS has students from many countries who engage in a wide range of research fields. I am a fourth-year undergraduate in the IPS course, where students spend three years at the Nishi-Waseda Campus in Tokyo before joining a laboratory at the Kitakyushu Campus in their final year. Drawing on what I learned in Tokyo, I am currently conducting research in the Bio-Robotics and Human Mechatronics Laboratory at IPS, focusing on voice and image analysis of singing based on my nearly ten years of experience in choral music. Our lab holds weekly meetings for discussion and information sharing, where I learn about the research conducted by other members of the laboratory, as well as many lessons through the process of writing academic papers and preparing presentations.
In Kitakyushu, I feel supported by the warm IPS community. Thanks to faculty members who provide various opportunities for growth both on and off campus, active senior graduate students, and supportive administrative staff, I enjoy a fulfilling student life. Surrounded by many international students, IPS broadens my perspective and knowledge.

SHIN, Dongha

Graduated from Gachon University
Doctoral Program, enrolled April 2025
Data Engineering Lab (Iwaihara Lab)

IPS offers an exceptional environment for advanced research in Information, Production and Systems. As a member of the Data Engineering Lab, I focus on Natural Language Generation, Large Language Models, and LLM-applied education methods—areas rapidly shaping the future of technology and learning. Having completed my master's degree at IPS and now continuing in the doctoral program, I've experienced the unique advantages this graduate school provides.
One of IPS's greatest strengths is its diverse international community, which has broadened my perspective and enriched my research. The diverse specialized laboratories ensure students can pursue their specific interests. Within our lab, we actively share findings and engage in discussions, expanding understanding beyond immediate topics. IPS empowers students to grow academically and socially.

OSAKA, Hiroki

Graduated from National Institute of Technology, Kagawa College
Master's Program, enrolled April 2025
Image Media Lab (Kamata Lab)

IPS offers diverse research fields and a cutting-edge environment where students grow by learning with peers from different backgrounds and gaining new perspectives and inspiration. With many laboratories to choose from, students can explore research topics that match their interests and future goals.
The Image Media Laboratory conducts research in image processing and pattern recognition using space-filling curves and fractals. Its work ranges from basic theory to applications and real-world implementation. In addition to developing new methods, students can take part in applying their research in practical settings, gaining hands-on experience comparable to internships. The laboratory also covers various topics, including medical image analysis, remote sensing image analysis, and biometrics, allowing students to pursue themes that suit their interests.
Studying at IPS not only deepens expertise but also provides a valuable opportunity to experience the joy of creating technologies that contribute to society.

ZHAO, Yixin

Graduated from University of Electronic Science and Technology of China
Master's Program, enrolled September 2024
Terahertz Integrated Systems Lab (Serita Lab)

IPS is a diverse graduate school where each professor's laboratory focuses on specific, cutting-edge research, offering students freedom and variety in choosing their future academic paths. Simultaneously, IPS provides numerous opportunities for research exchange and learning. The school hosts an annual conference that brings me closer to scholars worldwide and increases opportunities for academic exchange. Additionally, the school provides supplementary Japanese language courses and other cultural exchange activities. This allows me to delve into Japanese culture and daily life beyond my research, enriching my experience with the diverse joys of different cultures.
My laboratory focuses on cutting-edge terahertz optics research, dedicated to expanding the application of terahertz technology in sensing, imaging, and communications, as well as developing smaller, more integrated terahertz devices. I believe this is an exceptionally promising and forward-looking field of research that will profoundly transform our lives. I hope you too will find a research group at IPS that captures your passion!

NGUYEN, Minh Huyen

Graduated from Vietnam National University
Master's Program, enrolled April 2024
Micro and Nano Fluidic Device Lab (Mawatari Lab)

IPS offers a dynamic and excellent research environment for students passionate about advanced technology. Its multidisciplinary and international setting fosters a unique atmosphere for collaboration and innovation, allowing students to work with peers from diverse backgrounds.
In the micro- and nanofluidic lab, we focus on solving the challenge of accessing essential chemical and biological information by developing novel micro and nanofluidic devices integrated with sensing, information technology, and IoT for social implementation. We have regular seminars, enhancing students' communication skills for conferences and future careers. Moreover, with active domestic and international collaborations, students gain exposure to diverse projects, broaden their perspectives, and contribute to global scientific progress.

XIE, Jianan

Graduated from Sichuan Agricultural University
Doctoral Program, enrolled September 2024
Mobile Robotics Platform Lab (Hashimoto Lab)

IPS provides us with an excellent academic platform, equipped with advanced research facilities and distinguished professors. With a wide range of research directions available, students have the liberty to select topics that align with their passions.
In the Mobile Robotics Platform Laboratory, we aim to develop mobile robots that exceed the capabilities of humans and other living things. Our laboratory not only conducts regular seminars but also actively promotes participation in international conferences, facilitating the exchange of experiences with scholars from all over the world. Let's collaborate in developing practical robot systems to address societal issues. For dreams, for life.

Messages from Alumni

MIZUGUCHI, Yuiko

Completed the Master's Program in March 2025

Nikon Corporation

IPS has many international students, and about 80% of the students in my laboratory were from overseas. Through daily interaction with them, I learned the importance of understanding diverse perspectives. From this experience, I developed the ability to cooperate while respecting different cultures and values. Since communication was mainly in English, I improved my English skills and also realized the importance of language itself. This experience broadened my global outlook and expanded my international perspective.

The research environment at IPS is well equipped, with state-of-the-art facilities and strong support systems. I had many opportunities to conduct experiments. This allowed my research to deepen, leading not only to the acquisition of technical skills but also to new discoveries. IPS is an ideal place for those who wish to pursue research in English.

NINOMIYA, Toshinori

Completed the Master's Program in March 2024

Mobile System Business Division,
Sony Semiconductor Solutions Corporation

At IPS, I developed a mindset of actively embracing new knowledge and perspectives, and I continue to value this attitude today. IPS was not only a place to gain advanced expertise but also a unique opportunity to experience its global environment. When I first enrolled, I felt anxious about speaking in English with people from different backgrounds. However, through repeated discussions in seminars and lectures, I adapted to the new environment and am now glad I chose to challenge myself.

I also learned that it is important to advance research by involving those around me and by learning from and sharing knowledge and expertise with professors and laboratory members. This mindset has been highly useful in my current work, where cooperation with diverse people is essential. My experience at IPS strengthened not only my academic abilities but also my intercultural understanding and communication skills, which I believe will remain valuable throughout my life and career.

ZHOU, Weilian

Ph.D. Degree Awarded in March 2024

Postdoctoral Fellow at The Hong Kong Polytechnic University

My time at IPS was a journey of not only academic growth but also personal transformation. The most valuable lesson I learned was how to become a better person—someone with integrity, responsibility, and empathy. Through research, I discovered the importance of persistence, embracing challenges, and staying committed to my goals, even when faced with solitude or setbacks.

Equally significant was learning how to build meaningful relationships. Communicating with peers, advisors, and students taught me the importance of respect, collaboration, and accountability. These interactions shaped my understanding of responsibility—not just to my work but also to the people around me. The lessons from IPS continue to guide me, helping me live with purpose, responsibility, and optimism.

FAM, Rashel Putraruddy Scala

Ph.D. Degree Awarded in October 2023

Mobility System Solution Department Division,
Honda Motor Co., Ltd.

During my time at IPS Waseda, I had the privilege of experiencing a truly diverse and dynamic learning environment with a large number of international students from around the world. The versatile curriculum provided me with the tools to tackle challenges not only in academia but also in the broader industry.

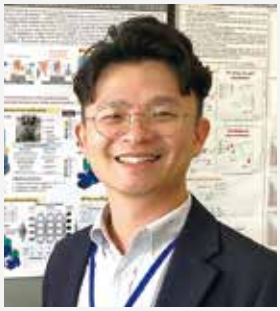
My research experience in the EBMT/NLP Laboratory allowed me to contribute to real-world solutions for current issues in the NLP field. I also benefited from invaluable collaborations with researchers from renowned institutions worldwide. The continuous support and guidance from the faculty and office staff were instrumental in helping me grow both academically and professionally.

FANG, Mengchu

Ph.D. Degree Awarded in September 2023

Foundation, Technology & Infrastructure IP Division, Renesas Electronics Corporation

I was a member of Wireless Communication Circuits Technologies Lab, where I designed analog high-frequency integrated circuits. In particular, I researched the design and technology of high-performance voltage-controlled oscillators. Through the research process, which starts from finding a problem, I developed thinking skills, problem-solving skills, and the ability to clearly convey the results to people. Today I work at a company where I design and develop clock IP, which is along the same line as the research I did in graduate school. In design and development, first you identify problems, then you need to consider solutions and design circuits in discussion with your team, just like when researching at university. I perform my day-to-day work leveraging the fundamentals of circuit design I learned at IPS and the experiences I gained researching. While at IPS I also had many opportunities to attend academic conferences and exhibitions and talk with a wide range of people, where I learned a lot. Thanks to these experiences, I am able to broaden my horizons beyond that of the work I do now.



ZHUANG, Jyun-Rong

Ph.D. Degree Awarded in June 2020

Associate Professor at Dept. of Mechanical Engineering, National Chung Hsing University

My time at Waseda IPS was transformative. The rigorous coursework and collaborative research environment taught me to question assumptions, approach problems systematically, and develop innovative solutions. The diverse community of faculty and students broadened my perspective and encouraged global thinking. Through various projects, I honed skills in communication and leadership—skills invaluable in my current work. The critical thinking and interdisciplinary methodology I acquired continue to shape my professional approach, enabling me to tackle complex challenges with confidence. I'm grateful for the mentorship and support I received, solidifying a lifelong passion for learning. Looking back, I realize these experiences fostered adaptability and resilience—capabilities guiding me today in every pursuit.

Curriculum and Course Offerings

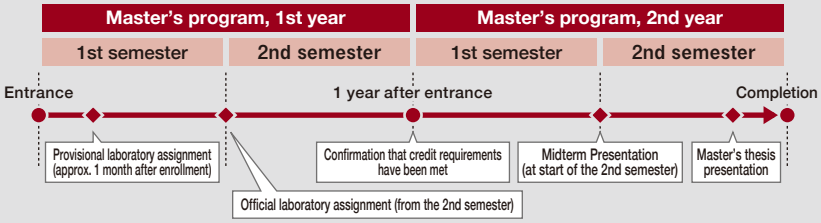
(Year 2027)

Curriculum

You can gain a broad range of knowledge and skills that span multiple fields in addition to your specialty. Our curriculum is designed to enable even students who do not have a background in science and engineering to start researching.
In the Doctoral Program, students are not required to obtain a specific number of credits, they can broaden their academic knowledge by taking various subjects in the Graduate School or in other graduate schools with the agreement of their supervisor.

Master's Program, from Entry to Completion

To complete a master's program, you must be enrolled in the program for at least two years, earn the number of credits specified for the required courses, receive a passing evaluation for your master's thesis, and pass a final examination. For the first six months of the program, you will have a provisional laboratory assignment. After six months you must apply for an official laboratory assignment, which you will have until you complete the program, by undergoing an interview with the laboratory's supervisor. From that point you will begin writing your master's thesis under the supervisor's direction. You may apply for a different laboratory from your provisional laboratory assignment.



Course Credit and Completion Requirements

Course Category		1 Year After Entrance	Completion Requirements
Courses	Fundamental Subjects	18 credits or more	20 credits or more (maximum of 4 credits in Fundamental subjects)
	Advanced Subjects		
	Laboratory Works		
	Specialized Subjects (required)	4 credits or more	2 credits or more
	Exercises (required)		8 credits or more
	Total	22 credits or more	30 credits or more
Master's thesis (required, no credits)			Receive a passing evaluation

※Note: If you take more than 4 credits worth of Fundamental subjects, the additional credits will not be counted towards the credits required for completion. The credits in first column indicate the total number of credits required for the first year, and credits in the second column indicate the total number required for both years.

The following subjects could be changed.

Fundamental Subjects

2 credit courses during the spring semester

- Applied Statistic Data Processing
- Data Structures and Algorithms
- Network Security
- ●Analog CMOS Circuits
- Kinematics of Machinery
- Internet of Medical Things (IOMT)
- ●Semiconductor Material and Device Characterization
- Optimization Technology and Its Applications
- Social System Engineering
- Theory of Constraint Processing
- Digital Signal Processing
- Microbial Energy Conversion and Sensing Systems
- Solid State Physics

2 credit courses during the fall semester

- Basic quantum mechanics for bio analysis and medical diagnosis
- Mechatronics
- ●Integrated Circuit Engineering
- ●Computational Intelligence
- Robotics
- Background and basics in distributional semantics
- Electromagnetics
- ●Digital Circuits
- Sensing Engineering
- Surface Science
- Electromagnetic Field Analysis
- Simulation Techniques
- Fundamentals of Organic Electronics Ⅰ
- Fundamentals of Organic Electronics Ⅱ
- Crystal engineering
- Business Process Modeling
- ●Internal Combustion Engines

Advanced Subjects

2 credit courses during the spring semester

Information Architecture

- Natural language processing (NLP)
- Human-Robot Interaction
- Machine translation technology
- ◆Industrial Marketing (Spring Quarter)
- ◆Theory of collective intelligence (Summer Quarter)
- Scheduling Algorithms
- Biosensor Engineering
- ●Image Processing
- ●Neural Networks

Production Systems

- ●Automobile Engineering
- Modeling and Control
- Bioelectronics
- Autonomous Mobile Robots
- ●Reliability Engineering
- Measurement and Analysis Device Engineering
- Multi-objective Decision Making and Application
- Biological Information Engineering
- Dynamics of Machinery
- Applied Organic Electronics
- ●Science and Technology of Functional Materials
- Thermal Energy Conversion Processes
- ★Special Exercise of Organic Electronics II

Integrated Systems

- Microprocessor
- Opto-electronic Integrated Circuits
- Transmission Circuits
- System LSI Architecture
- MEMS Device Engineering
- Semiconductor Memory Technology and Engineering
- Laser Engineering
- Terahertz Wave Engineering
- Machine Learning

Common Field

- ◆Operations Management as a Strategic View Point_Spring

2 credit courses during the fall semester

Information Architecture

- Bioengineering
- Fundamental Biosystems
- Bioinformatics
- Information Organization
- Database
- Social Information Design
- ◆Smart factory I (Fall Quarter)
- ◆Smart Factory II (Winter Quarter)
- CPS Prototyping
- ●Pattern Recognition
- Information Security Engineering

Production Systems

- Biomicromachine
- ◆Information Management (Fall Quarter)
- Design of Heuristic Search and its Application
- Micro and Nano Fluidic Engineering
- Design of Machine Elements
- Medical Device Engineering
- ●Physics and Technology of Semiconductor MOS Devices
- ●Thin Film Processing
- Thermal Energy Conversion Systems
- ★Special Exercise of Organic Electronics I

Integrated Systems

- ●Packaging and Assembly Technologies for Integrated Systems
- High-speed, High-frequency LSI Design
- System LSI Design
- Video Signal Processing
- Semiconductor Device Technology and Engineering
- Design for Testability
- Optical Semiconductor Devices
- Optical Circuit Simulation Technology
- Analog LSI Design
- Finite Element Analysis
- Acoustic Signal Processing

Common Field

- ◆Operations Management as a Strategic View Point_Fall

●The subjects of Joint Graduate School Intelligent Car, Robotics & AI Course ★The credits are not included in the required credits for graduation. ◆1 credit

Laboratory Works

Production Systems

2 credit courses during the fall semester

Laboratory Works on Production Systems

Specialized Subjects

2 credit courses during the fall semester

Information Architecture

- Robotics and mechatronics
- Smart Industry
- Community Computing
- Data Engineering
- Humanity-Centered Interaction
- Computational Neuroscience
- Multimedia Engineering
- Example-based machine translation/NLP
- Bio Information Sensing

Production Systems

- Micro and Nano Fluidic Device
- Advanced Bioiontronics
- Biomedical Engineering
- Mobile Robotics Platform
- Semiconductor Materials and Device Engineering
- Mechanical System Design
- Design Engineering and System
- Information and Production Process
- Intelligent Semiconductor Engineering
- Powertrain System

Integrated Systems

- Image Information Systems
- Intelligent Acoustic Systems
- Terahertz Integrated Systems
- Light Emitting Systems
- Integrated System Optimization
- Wireless Communication Circuits Technologies
- High-Level Verification Technologies
- Green Integrated Systems
- Opto-electronic Integrated Systems
- Micro Electro-Mechanical Systems

Exercises

A: 2 credit courses during the fall semester, B: 4 credit courses during the spring semester, C: 2 credit courses during the spring semester, D: 2 credit courses during the fall semester

Information Architecture

- Smart Industry A,B,C,D
- Neurocomputing Systems A,B,C,D
- Database System A,B,C,D
- Image Media A,B,C,D
- Bio Information Sensing A,B,C,D
- Example-based machine translation/NLP A,B,C,D
- Robotics and mechatronics A,B,C,D
- Network Intelligence and Security B,C
- Community Computing A,B,C,D
- Humanity-Centered Interaction A,B,C,D

Production Systems

- Design Engineering and System A,B,C,D
- Mobile Robotics Platform A,B,C,D
- Micro and Nano Fluidic Device A,B,C,D
- Bioiontronics A,B,C,D
- Semiconductor Materials and Device Engineering A,B,C,D
- Biomedical Engineering A,B,C,D
- Mechanical System Design A,B,C,D
- Production Process A,B,C,D
- Intelligent Semiconductor Engineering A,B,C,D
- Powertrain System A,B,C,D

Integrated Systems

- Micro Electro-Mechanical Systems A,B,C,D
- Image Information Systems A,B,C,D
- Light Emitting Systems A,B,C,D
- High-Level Verification Technologies A,B,C,D
- Intelligent Acoustic Systems A,B,C,D
- Terahertz Integrated Systems A,B,C,D
- Opto-electronic Integrated Systems A,B,C,D
- Green Integrated Systems A,B,C,D
- Integrated System Optimization A,B,C,D
- Wireless Communication Circuits Technologies A,B,C,D

※The syllabuses of Specialized subjects and Exercises are available on "Web Syllabus" or Course Registraion page.

Web Syllabus

Admissions Information

For April and September 2027 Admission

Admissions

For details, please refer to the Admissions Guidelines. The Admissions Guidelines and application forms can be downloaded from the "Admissions" page on the IPS website.

Programs and Degrees at IPS

Major / Program	Enrollment Capacity	Total Capacity	Admission Period	Degree
Master's Program in Information, Production and Systems Engineering	200	400	April, September	Master of Engineering
Doctoral Program in Information, Production and Systems Engineering	20	60	April, September	Doctor of Engineering

◯Fields of Study : Information Architecture, Production Systems, Integrated Systems
◯Number of Students to Be Admitted (Total for April and September Admissions): Master's Program: 200 students / Doctoral Program: 20 students

Admissions Schedule

[April 2027 Admission]

	Application Category	Program	Application Period	First Screening Results Announcement	Second Screening (Online Interview)	Final Results Announcement	First Enrollment Period	Second Enrollment Period
July Examination	Recommendation (Domestic and Overseas Partner Schools including F/G Courses) General Working Professionals	Master's Program Doctoral Program	May 2026	June 2026	July 2026	July 2026	October 2026	February 2027
November Examination	Recommendation (Domestic and Overseas Partner Schools including F/G Courses) General Working Professionals	Master's Program Doctoral Program	September 2026	October 2026	November 2026	November 2026	December 2026	

[September 2027 Admission]

	Application Category	Program	Application Period	First Screening Results Announcement	Second Screening (Online Interview)	Final Results Announcement	First Enrollment Period	Second Enrollment Period
February Examination (Overseas Partner Universities Only)	Recommendation (Overseas Partner Schools including F/G Courses)	Master's Program Doctoral Program	December 2026	January 2027	February 2027	February 2027	March 2027	August 2027
May Examination	Recommendation (Domestic and Overseas Partner Schools including F/G Courses) General Working Professionals	Master's Program Doctoral Program	April 2027	May 2027	May 2027	May 2027	June 2027	

Admission Requirements by Category

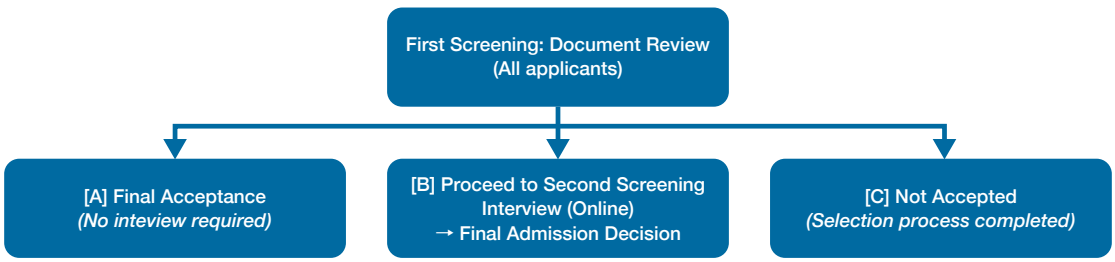
IPS offers three admission categories and evaluates applicants based not only on their specialized knowledge but also on their motivation to learn and problem awareness.

Application Category	Admission Requirements		Required Application Documents
	Master's Program	Doctoral Program	
General	—	—	・Research Plan ・Overview of Bachelor's or Master's Thesis ・Academic Transcript ・English Proficiency Certificate
Recommendation* (Domestic and Overseas Partner Schools)	・Applicants must have a recommendation from a person who can evaluate their academic ability, such as a graduation thesis supervisor. ・Applicants must have an excellent academic record. *No specific GPA or grade requirements are stipulated.*	・Applicants must have a recommendation from a person who can evaluate their academic ability, such as a master's thesis supervisor. ・Applicants must have an excellent academic record. *No specific GPA or grade requirements are stipulated.*	・Research Plan ・Overview of Bachelor's or Master's Thesis ・Academic Transcript ・English Proficiency Certificate
Working Professionals	・Applicants must be currently employed by, or have previously been employed by, a company, government agency, or educational institution. ・Applicants must have notable professional achievements in their work.	・Applicants must be currently employed by, or have previously been employed by, a company, government agency, or educational institution. ・Applicants must have notable professional achievements in their work.	・Research Plan ・Overview of Professional Achievements ・Academic Transcript ・English Proficiency Certificate

* This admission category is intended for students enrolled at universities that have partnership agreements with our Graduate School.

Selection Method

The same selection process applies to all applicants, regardless of the admission category, the program applied for, or whether the application is domestic or international.



▲ Scan the QR code for admissions inquiries.

Tuition and Fees (Admission 2027)

Tuition Fees

Master's program

(Unit : JPY)

Academic Year	Term of payment	Admission fee	School fees and other fees			Total
			Tuition	Seminar fee	Membership fee of student health promotion mutual aid association	
1st year	At admission	300,000	581,000	25,000	1,500	907,500
	2nd term	–	581,000	25,000	1,500	607,500
	Total	300,000	1,162,000	50,000	3,000	1,515,000
2nd year	1st term	–	731,000	25,000	1,500	757,500
	2nd term	–	731,000	25,000	1,500	757,500
	Total	–	1,462,000	50,000	3,000	1,515,000

Doctoral program

(Unit : JPY)

Academic Year	Term of payment	Admission fee	School fees and other fees			Total
			Tuition	Seminar fee	Membership fee of student health promotion mutual aid association	
1st year	At admission	200,000	353,500	25,000	1,500	580,000
	2nd term	–	353,500	25,000	1,500	380,000
	Total	200,000	707,000	50,000	3,000	960,000
2nd year	1st term	–	453,500	25,000	1,500	480,000
	2nd term	–	453,500	25,000	1,500	480,000
	Total	–	907,000	50,000	3,000	960,000
3rd year	1st term	–	453,500	25,000	1,500	480,000
	2nd term	–	453,500	25,000	1,500	480,000
	Total	–	907,000	50,000	3,000	960,000

Students who have newly enrolled master's program will be required to pay 40,000 yen as the "Alumni association membership fee".This membership fee will be paid in the final term/semester of their last year, which covers 10 years of annual membership fee that students pay in advance.Those who have graduated from undergraduate school at Waseda University, transferred students, doctoral program students, double degree program students, research students and non-degree students are exempted from paying this fee.

Scholarship Programs

Scholarship

Scholarship programs offer international students a secure research life

IPS is prepared to assist you in your university life after enrollment with a wide array of scholarship programs including Waseda's own scholarships, as well as scholarships offered by the government or private foundations. Of special interest to international students at IPS are scholarships such as the FAIS Scholarship provided by the Kitakyushu Foundation for the Advancement of Industry, Science and Technology, and the Sekihara Dalian City International Student Scholarship provided by the Kitakyushu International Association. Below is a listing of scholarships received by IPS students in 2025. For more detailed information on this and related subjects, please refer to the scholarship information on the IPS web site after enrollment.

A list of 2025 Scholarships ※In addition to those listed below,many scholarships are available for direct student application.

※"–" : Not applicable

Name of Scholarship				Interest	Amount		Duration	Number of Scholarship Student	
					Master	Doctor		Master	Doctor
For Japanese Students	Japan Student Services Organization	Japan Student Services Organization Type 1	Loan	No	¥50,000～¥122,000 ／ Month		1 to 3 years	3	1
		Japan Student Services Organization Type 2	Loan	Yes	¥50,000～¥150,000 ／ Month		1 to 3 years	0	1
		Japan Student Service Organization Special Increased Scholarship at School Entry	Loan	Yes	¥100,000～¥500,000 ／ lump-sum payment		Lump sum	0	0
	Waseda University Scholarship	Azusa Ono Memorial Scholarship	Provision		¥400,000／Year	–	1 year	3	–
		Waseda Almuni Scholarship	Provision		¥400,000／Year	–	1 year	1	–
	Scholarship offered by private foundation	Scholarship by The Mitsui Foundation for Advancement of Tool and Die Technology	Provision		¥80,000／Month	–	Until the end of regular course	1	–
For International Students	Waseda University Scholarship	Waseda University Partial Tuition-Waiver Scholarship for Privately Financed International Students	Reduction		50%	–	Once a year	27	–
		Reserved Scholarship for Successful International Examinees	Provision		¥500,000／Year	–	Up to 2 year	10	–
		Azusa Ono Memorial Scholarship for International Students	Provision		¥400,000／Year	–	1 year	8	–
		Waseda University Emergency Scholarship	Provision		¥400,000／Year		1 year	0	0
	Scholarship offered by the government or private foundation	Japanese Government Scholarship	Provision		¥144,000～¥145,000／Month+Tuition		Until the end of regular course	6	0
		Honors Scholarship for Privately Financed International Students	Provision		¥48,000／Month		Up to 1 year	35	0
		Postgraduate Study Abroad Program by China Scholarship Council	Provision		–	¥150,000／Month+Tuition	Until the end of regular course	–	1
		CSC Special Selection for 1st year Student of Doctoral Programs	Provision		–	¥150,000／Month+Tuition	Until the end of regular course	–	1
		Rotary Yoneyama Memorial Foundation	Provision		¥140,000／Month		1 year	0	0
		KSRP Scholarship by FAIS	Provision		¥50,000／Month		1 year	13	0
		The Kitakyushu-Dalian Friendship International Students' Scholarship	Provision		¥20,000／Month		1 year	1	0
For All Students	Waseda University Scholarship	Okuma Memorial Scholarship	Provision		¥400,000／Year	–	1 year	2	–
		ASAHI-KOSAN Group Scholarship	Provision		¥500,000／Year	–	1 year	4	–
		Okawa Isao Information-Communication Academic Scholarship	Provision		–	¥600,000／Year	1 year	0	2
		Okawa Isao Memorial Achievement Award	Provision		–	¥600,000／Year	1 year	0	0
		Scholarship for Fostering Researchers in Doctoral Programs	Provision		–	¥500,000／Year	1 year	–	30
		Ryoichi Sasakawa Young Leaders Fellowship Fund Program (SYLFF)	Provision		$ 10,000／Year		Up to 2 year	0	0
	Research Encouragement Fund.etc	Waseda University Open Innovation Ecosystem Program for Pinoneering Research (W-SPRING)	Provision		–	Reserch expenses ¥500,000／Year	Until the end of regular course	–	40
		Waseda University Open Innovation Ecosystem Program for Pinoneering Research AI (W-SPRING)	Provision		–	living and reserch expenses Maxmum ¥3,900,000／Year	Until the end of regular course	–	4

(¥ : JPY)

〈As of December, 2025〉

Model case of scholarship

A Japanese master student (Case A)

ASAHI-KOSAN Group Scholarship	¥500,000/Year×1
Japan Student Services Organization Type 1 (Loan)	¥88,000/Month×12
Annual amount	¥1,556,000

B International master student (Case B)

Honors Scholarship for Privately Financed International Students	¥48,000/Month×12
Partial Tuition-Waiver	
Annual amount	¥576,000 Plus Partial Tuition-Waiver

C International doctoral student (Case C)

Scholarship for Fostering Researchers in Doctoral Programs	¥500,000/Year
Honors Scholarship for Privately Financed International Students	¥48,000/Month×12
Annual amount	¥1,076,000

Scholarship for Fostering Researchers in Doctoral Programs

At Waseda University, starting with 2009 entrants, we have established a scholarship program to help students currently enrolled in a doctoral program to become outstanding scholars with superior research capabilities and extensive knowledge of their fields. This program provides ¥500,000 per year (paid annually) to all eligible persons, other than those receiving a tuition exemption, who are enrolled as doctoral candidates during the standard period of study; who are fully qualified to apply for this scholarship; and who have submitted the prescribed application documents.

*For details, please refer to the publication International Students' Handbook, which is distributed during the entrance procedure, or to the Scholarship Section page on our website.

Scholarships and Financial Assistance Section

Campus Life & Kitakyushu Science and Research Park

Visiting Information

Kitakyushu: A New Stage for Your Research Life

Kitakyushu, home to IPS, is a major city of about 900,000 people and the second largest in Kyushu after Fukuoka. Long known as a manufacturing hub, it hosts globally recognized companies and major production bases in steel, chemicals, and automotive industries. In recent years, major IT firms have expanded operations, and collaboration among universities, companies, and research institutions has grown.
While commercial and entertainment facilities are concentrated in the city center, the city is surrounded by the sea and mountains, offering a comfortable environment close to nature and fresh local food. With a lower cost of living than the Tokyo metropolitan area, students can enjoy a balanced and fulfilling academic life.

Kitakyushu Science and Reserch Park, home of IPS

- Over 60 companies and research institutes on one campus
- A core academic research base for Asia concentrating the most advanced scientific knowledge
- Cooperation with the business community to promote technological advancement and industrial innovation

A Kitakyushu Robot & DX Promotion Center
Supports technological innovation and promotes DX in the robotics and automotive electronics industries.

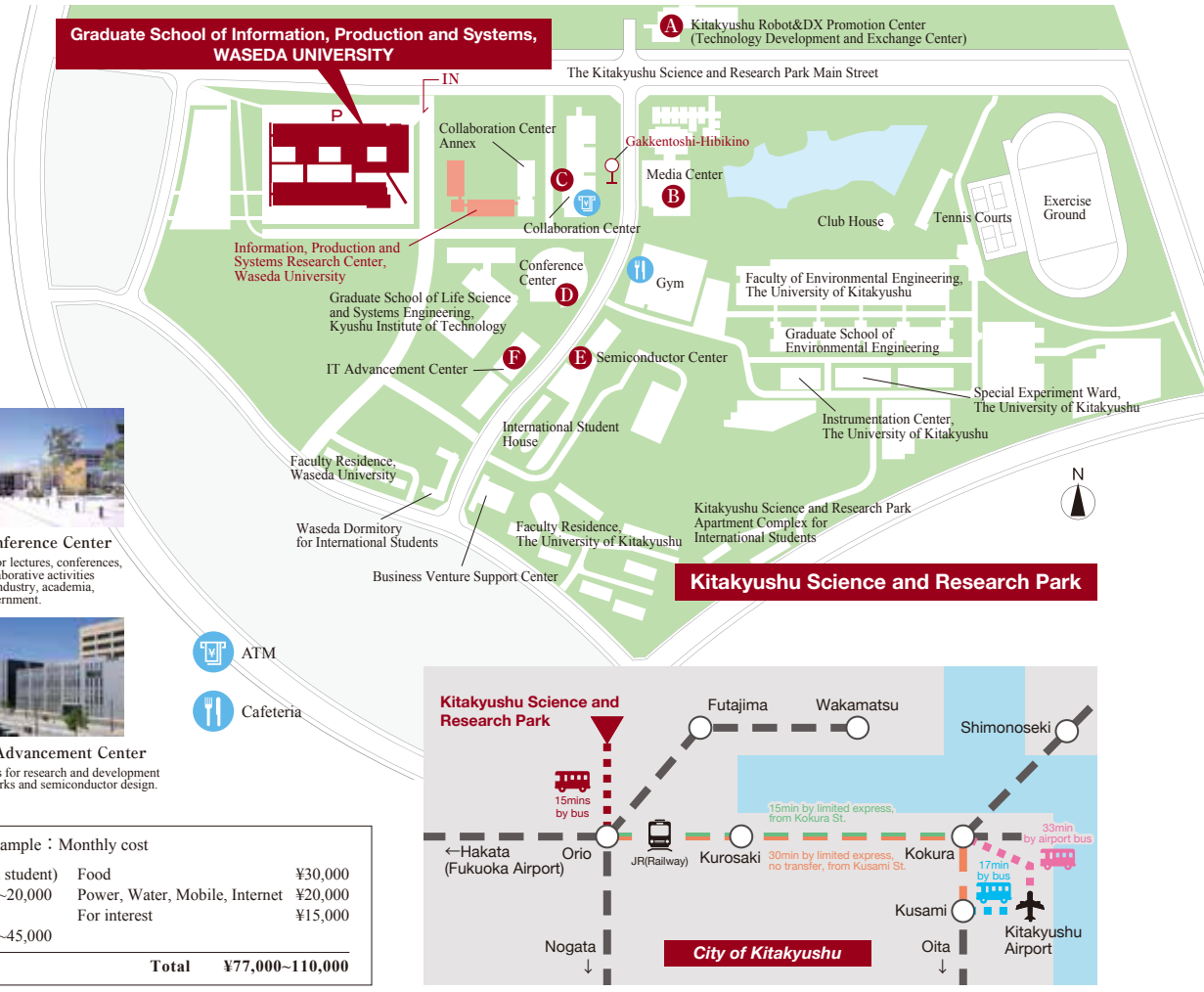
B Media Center (Library, Information Process Facility)
A multimedia station for the integration and transmission of information.

C Collaboration Center
Core facilities for pursuing research among industry, academia and government.

D Conference Center
Venue for lectures, conferences, and collaborative activities among industry, academia, and government.

E Semiconductor Center
Supports research and development in semiconductor microfabrication technology.

F It Advancement Center
Facilities for research and development in networks and semiconductor design.



Example：Monthly cost

Rent (Dormitory for international student) ¥12,000~20,000	Food	¥30,000
	Power, Water, Mobile, Internet	¥20,000
Rent (Private apartment) ¥32,000~45,000	For interest	¥15,000
	Total	**¥77,000~110,000**

For further information of tuition and scholarships — Office — gakumu-ips@list.waseda.jp

IPS
情報生産システム研究科
Graduate School of Information, Production and Systems

早稲田大学
大学院情報生産システム研究科

Graduate School of Information, Production and Systems,
Waseda University

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Graduate School of Information, Production and Systems, Waseda University
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https://www.waseda.jp/fsci/gips/en/