2025

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 (22 countries and regions) gather here, and our alumni boast successful careers in the leading manufacturers in Japan and academic institutions worldwide—testimony to IPS's rich global environment. (94% of our students are international.) 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, recently IPS started AsianDX, a digital transformation talent development program that offers recurrent education and reskilling—two themes that are in the spotlight today—in a consortium operated by the Information, Production and Systems Research Center (IPSRC), which is part of IPS. We view the consortium as a place where locals and the university can connect by engaging in casual conversation. Please feel free to join. We will make every effort to ensure that we can grow together.

You can check IPS's Educational Policy here.

The three main missions of Waseda University

In “Waseda Vision 150,” we interpret the mission of Waseda University as encompassing the principles described below, making them the focal point of the development of our educational and research systems as we approach the 150th anniversary of the university’s founding.

1. Independence of Scholarship – The Cornerstone of Our Contribution to the World

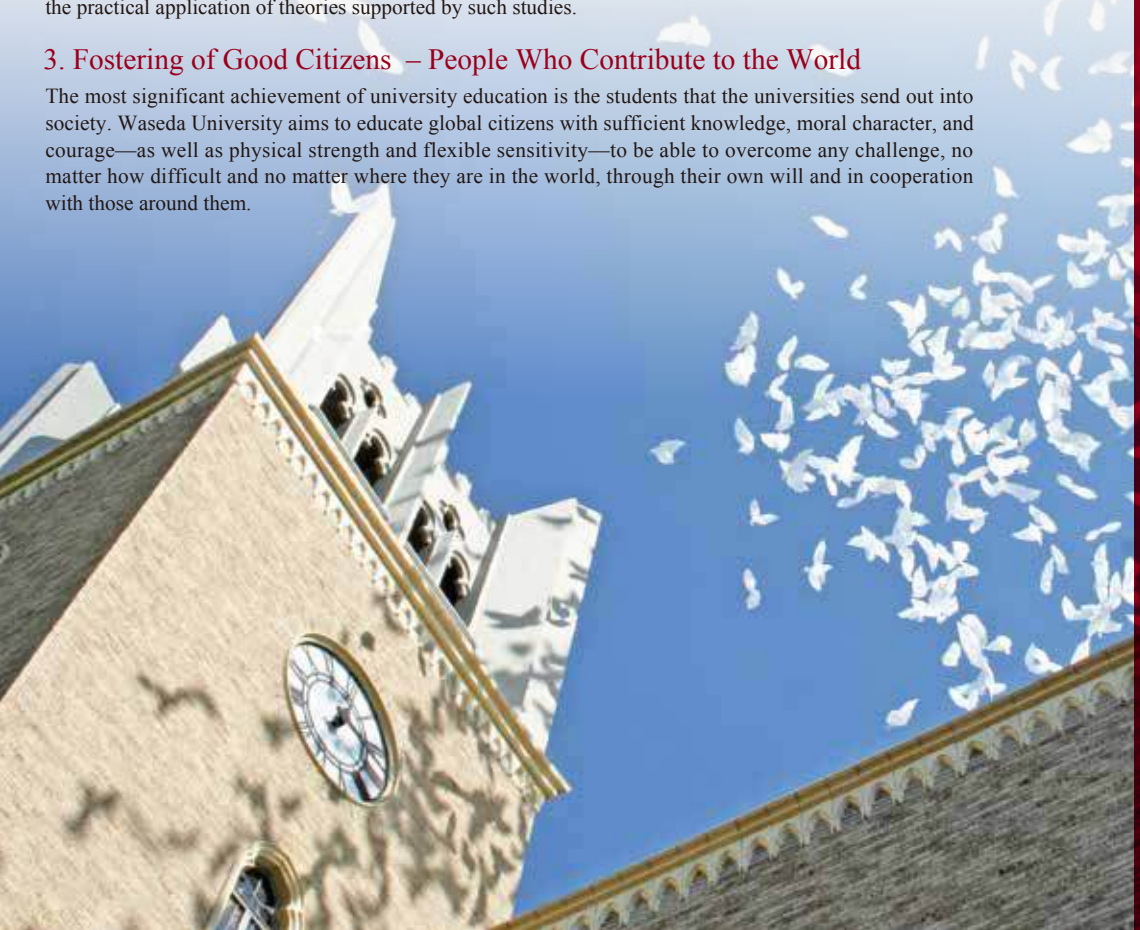
The cornerstone of the independence of scholarship is having a critical mind that is free from all constraints and focused on the nature of reality. Waseda University aims to contribute to the creation and development of scholarship by conducting research in the humanities, social sciences, and natural sciences—as well as any fields that integrate these disciplines—in an environment where students and faculty members can interact independently and freely and by disseminating the outcomes to the world.

2. Practical Application of Scholarship – Ways and Means of Contributing to the World

Academic research can be further developed by reaching beyond its boundaries and paving the way for its application in culture, society, and industry. In addition to conducting education and research at the undergraduate and graduate levels, Waseda University strives to enhance professional education and lifelong education and to pioneer a new era by promoting greater interaction between theoretical studies and the practical application of theories supported by such studies.

3. Fostering of Good Citizens – People Who Contribute to the World

The most significant achievement of university education is the students that the universities send out into society. Waseda University aims to educate global citizens with sufficient knowledge, moral character, and courage—as well as physical strength and flexible sensitivity—to be able to overcome any challenge, no matter how difficult and no matter where they are in the world, through their own will and in cooperation with those around them.



Contents

Internationalism of IPS

A global graduate school, IPS attracts the largest number of distinguished international scholars in Japan.

Providing a hybrid environment where the student can experience Japanese culture and life while conducting research in English

Coming from all over the world - in particular Asia - to study at IPS, students speak a variety of languages and come from diverse cultures and social backgrounds. While they take lectures and conduct research in English, IPS provides a hybrid environment where students experience Japanese culture and life in a cross-cultural setting with a variety of languages spoken. The experience of studying abroad at IPS will provide you with an invaluable life experience.

Fostering world-class researchers and engineers in a wide range of research areas from fundamental to applied research

Here at IPS, we promote world-class research. The student determines the direction of his or her studies within this research setting. Lab seminars offer lively discussions in which professors, postdocs, and PhD students take part. In turning out world-class researchers and engineers, we encourage students to write journal articles and present their research results at leading international conferences.

Partnership and interchange with leading overseas universities in Asia and beyond.

IPS is engaged in partnerships and interchange with many leading overseas universities, especially in Asian countries such as China, South Korea, Thailand, and Malaysia.

Main Overseas Partner Universities

CHINA (Mainland)
Beijing Institute of Technology
Beijing Jiaotong University
Beijing University of Chemical Technology
China University of Geosciences
Chongqing University
Dalian University of Technology
Fudan University
Huazhong University of Science and Technology
Jilin University
Nanjing University
Nanjing University of Posts and Telecommunications
Peking University
Shanghai Jiao Tong University
Shanghai University
Sichuan University
South China University of Technology
Southeast University
Tianjin University
Tongji University
Tsinghua University
University of Electronic Science and Technology of China
Wuhan City
Xiamen University
Xi'an Jiaotong University
Xidian University
Zhejiang University

TAIWAN
National Central University
National Cheng Kung University
National Sun Yat-sen University
National Taipei University of Technology
National Taiwan University
National Yang-Ming Chiao Tung University

KOREA
Chonnam National University
Incheon National University
Inha University
Korea Advanced Institute of Science and Technology
Pai Chai University
Pusan National University
Seoul National University

THAILAND
Chiang Mai University
Chulalongkorn University
Thammasat University

MALAYSIA
Malaysia-Japan International Institute of Technology
Universiti Teknologi PETRONAS

INDONESIA
Bandung Institute of Technology

VIETNAM
Hanoi University of Science and Technology
Ho Chi Minh City University of Technology
Vietnam National University, Hanoi

PHILIPPINES
Ateneo de Manila University

FRANCE
Grenoble Alpes University

ITALY
Sapienza University of Rome

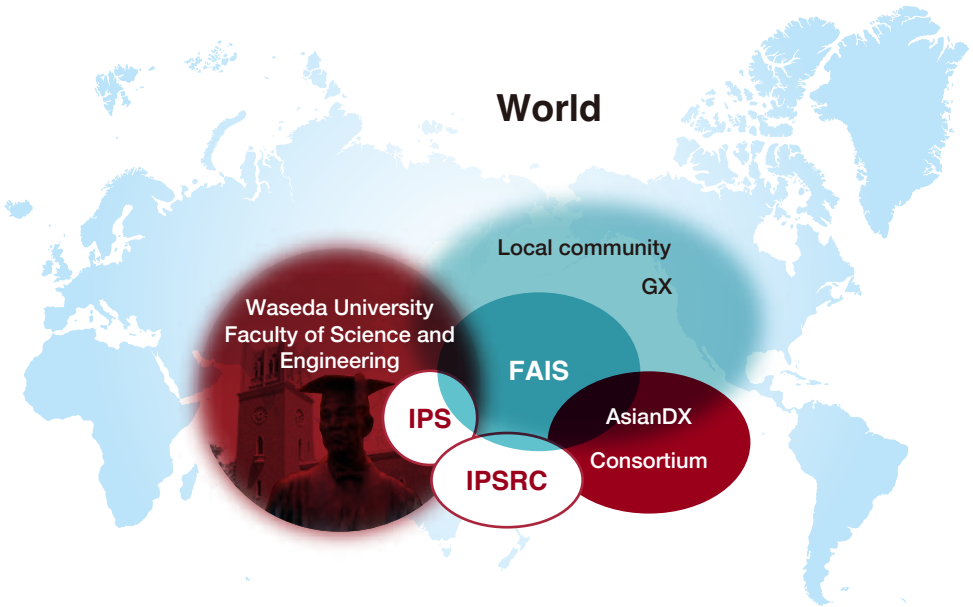
Advanced projects of IPS

Collaborate with IPS

At Waseda University IPS, numerous projects are carried out in collaboration with national and regional organizations, private companies, and other research institutions, with the IPS Research Center (IPSRC) serving as the hub.

As of 2024, we have initiated a wide range of new projects: 20 Grants-in-Aid for Scientific Research projects, 27 educational and research projects financed with public external funds, and 19 joint research projects with companies. With 29 faculty members currently on staff, it is evident that each faculty member is engaged in multiple projects.

IPS and IPSRC, in collaboration with Kitakyushu Foundation for the Advancement of Industry, Science and Technology (FAIS), have established a consortium to facilitate regional partnerships. Furthermore, our graduates have gone on to pursue successful careers not only at leading manufacturers in Japan but also in academia worldwide, reflecting the rich international environment that IPS fosters.



Career after graduation

Proven job-placement results set Waseda apart. Graduates are making their mark in a host of leading enterprises.

Robust job-placement support at IPS

The demand for globalization and informanization in all areas of business today means that an ever-expanding field of opportunity awaits IPS graduates, with their combination of wide-ranging specialized knowledge, creativity, and solid practical and communicative skills. You can strengthen your placement prospects still further at IPS through involvement in enterprise-funded research or collaborative projects.

Academic institution employment for IPS graduates (Doctor holders)

Dalian University of Technology
Shenyang Ligong University
Dongbei University of Finance and Economics
Yanbian University
Beijing Jiaotong University
Nankai University
Henan University of Economics and Law
Henan University of Technology
Fudan University
Wuhan University
Nanjing University of Posts and Telecommunications
Nanjing University
Nanjing University of Finance and Economics
Tongji University
Zhejiang GongSheng University
Zhejiang University of Technology
Xi'an Jiaotong University
Southeast University
East China University of Science and Technology
Sun Yat-sen University
Shanghai Maritime University
Shaanxi Normal University
Dali University
National Cheng Kung University
National Chengchi University
Yonsei University
Dong-eui University
Pusan National University
Universiti Tun Hussein Onn Malaysia
Universiti Teknikal Malaysia Melaka
National University of Singapore
State University of Malang
Stanford University

Main places of employment for IPS graduates

●Electronics, Information, Telecommunication and Semiconductor
NTT
Microsoft Japan
Hitachi
Mitsubishi Electric
Canon
Sony
IBM Japan
Rakuten
Panasonic
Toshiba
NEC
Fujitsu
SHARP
Softbank
ROHM
ADVANTEST
Renesas Electronics
TOKYO SEIMITSU
Murata Manufacturing
Fuji Electric
RICOH
SEIKO EPSON
KONICA MINOLTA Japan
KYOCERA
OMRON
Yokogawa Electric
Accenture Japan
Brother Industries
ZENRIN
Foster Electric
Fuji Xerox
Samsung Electronics
LG Electronics
Huawei Technologies
Alibaba Group

●Automobile
TOYOTA
NISSAN
Honda
Mazda
DENSO
Mitsubishi Motor
DAIHATSU
YAMAHA
Aisin Seiki
JTEKT

●Energy, Plant, Machinery and Metal
NIPPON STEEL
Mitsubishi Heavy Industries
Kobe Steel
Kyushu Electric Power
Tohoku Electric Power
The Chugoku Electric Power
FANUC
JGC
Komatsu
Asahi Kosan
Idemitsu Kosan
YKK AP
Schlumberger
JX Holdings
Hitachi Zosen

●Chemistry and Food
SUMITOMO CHEMICAL
Mitsui Chemicals
FUJIFILM
TORAY
Dai Nippon Printing
ASAHI BREWARIES
NISSIN FOODS HOLDINGS

●Railway and Airline
Japan Railway
ANA
Nishi-Nippon Railroad

●Public office, Finance and Others
Ministry of Land, Infrastructure, Transport and Tourism
City of Kitakyushu
Centre national de la recherche scientifique
Nomura Research Institute
Daiwa Institute of Research
Nagasaki Broadcasting Company
Sendai Television
Nishinippon Shimbun
Sumitomo Mitsui Banking
Japan Post Bank
ORIX Bank
The Hongkong and Shanghai Banking
Nomura Securities
Shimizu
SECOM

IPS stands out as a base of venture start-ups

Some students and graduates of IPS have put their research results to work serving society across a wide range of venture businesses. Dr. Yoshinaga, a graduate of the doctoral program, is making his mark in the IT industry with a company he set up to provide calendar services and application services based on the theme of "creating new value from logs."

YOSHINAGA, Hirokazu
Doctoral Degree

Fostering technical talent

Study at IPS

One of the Waseda University's admission schemes is the "Regional Collaboration and Contribution Admission (Kitakyushu Regional Collaboration Recommendation Admission)" (IPS Course). The IPS Course is a curriculum in which students from designated schools in Kyushu, Shikoku and Chugoku regions enroll in the School of Fundamental Science and Engineering at Waseda University's Nishi-Waseda Campus in Tokyo. They then study in one of the Departments of Applied Mathematics, Applied Mechanics and Aerospace Engineering, Computer Science and Engineering and Communications and Computer Engineering. In their fourth year, they are assigned to a laboratory at IPS to conduct graduation research and then proceed to the master's program (with the option to continue to the doctoral program if desired). This course plays an important role as Waseda University's regional contribution-oriented human resource development program.

At IPS, enrollment opportunities are available in April and September. The institution provides an environment where students can obtain their degrees using either Japanese or English, fostering a high level of internationalization. Upon enrollment, general courses are offered to develop the academic skills necessary for conducting research in IPS's three fields. These include Fundamental subjects, Advanced subject, and Laboratory works. Additionally, in research laboratories, students receive education and research guidance through highly specialized lectures and practical training courses, equipping them to become advanced technical professionals. Furthermore, students can take courses through the "Joint Graduate School Intelligent Car, Robotics & AI", which is organized in collaboration with other universities within the Kitakyushu Science and Research Park.

We are also committed to recurrent and reskilling education for working professionals. Within IPS Research Center (IPSRC), we have launched the research and exchange initiative "AsianDX," which has already produced over 1,500 certificate holders. Thus, IPS provides diverse learning opportunities.

Joint Graduate School Intelligent Car, Robotics & AI Website

AsianDX Website

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 entire field of information and telecommunications, from information sensing, transmission, analysis, to decision making.

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.

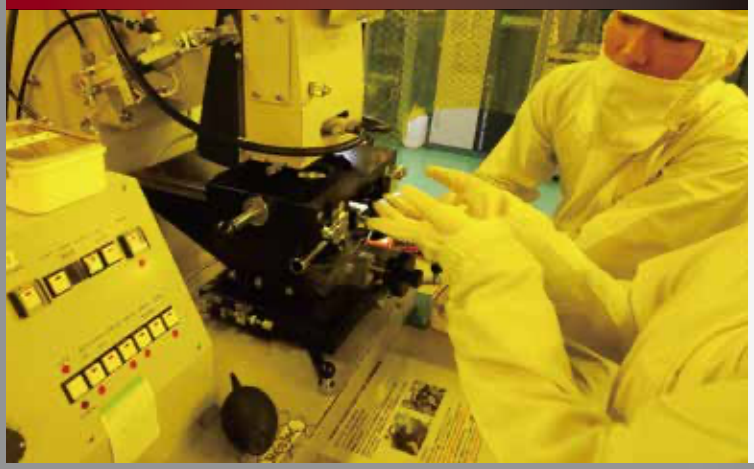
Research Area

●Information and communication model ●Computational intelligence
●Language and media information ●Social and management informatics
●Robotics & mechatronics ●Fiber-optic systems

●Smart Industry ●Neurocomputing Systems
●Data Engineering ●Image Media ●Bio Information Sensing
●Example-based machine translation/NLP
●Bio-Robotics & Human-Mechatronics ●Fiber-optic systems
●Community Computing ●Network Intelligence and Security

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.

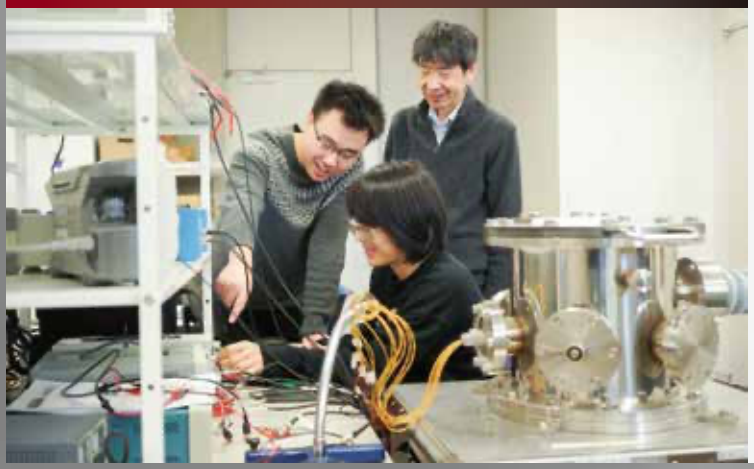
Research Area

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

●Design Engineering and System ●Mobile Robotics Platform
●Micro and Nano Fluidic Device ●Current Bioelectronics
●Mechanical System Design ●Production Process ●Functional Thin Films
●Semiconductor Materials and Device Engineering ●Biomedical Engineering

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

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

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.

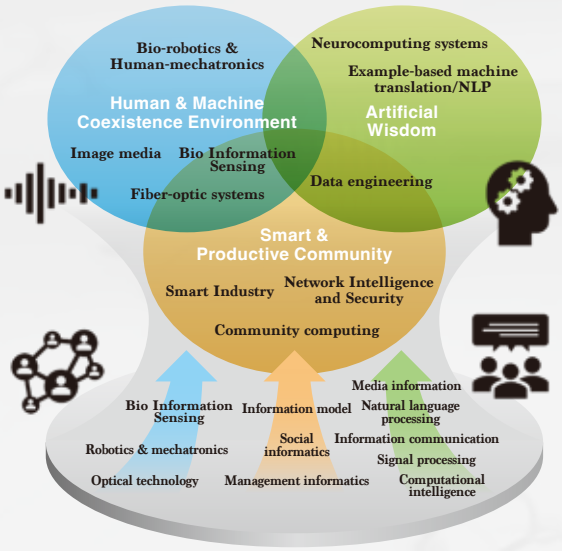
Education encompassing practicality

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

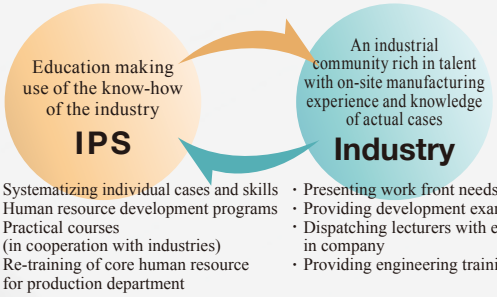
Together with technical expertise, we aim to cultivate the abilities of co-creation and having a bird's-eye perspective that are necessary to thrive in the society of the future.



Information and technologies encircling smart society

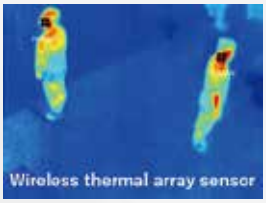
Safe and secure society and comfortable environment comprised of human, information and things. The information architecture field is tackling research on information and system technologies in wide spectrum and its application, which support upcoming smart society

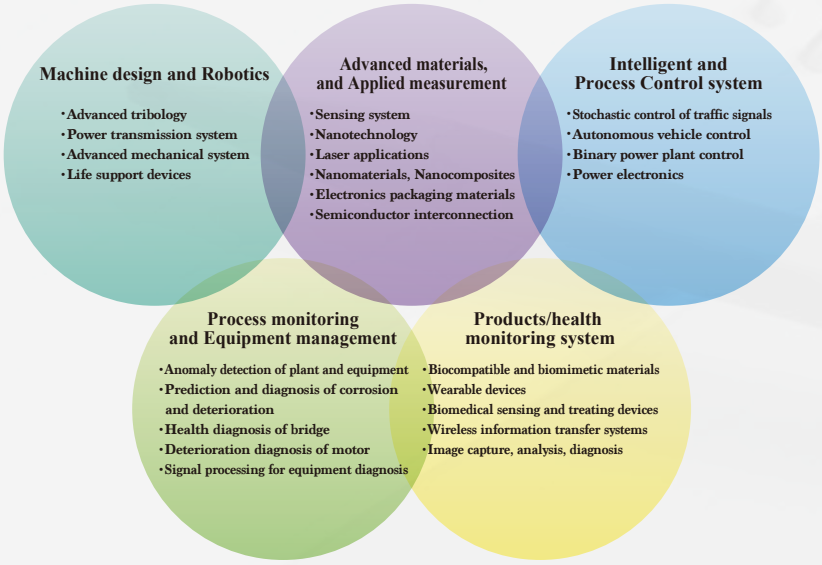
Cooperation with domestic industries



- 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

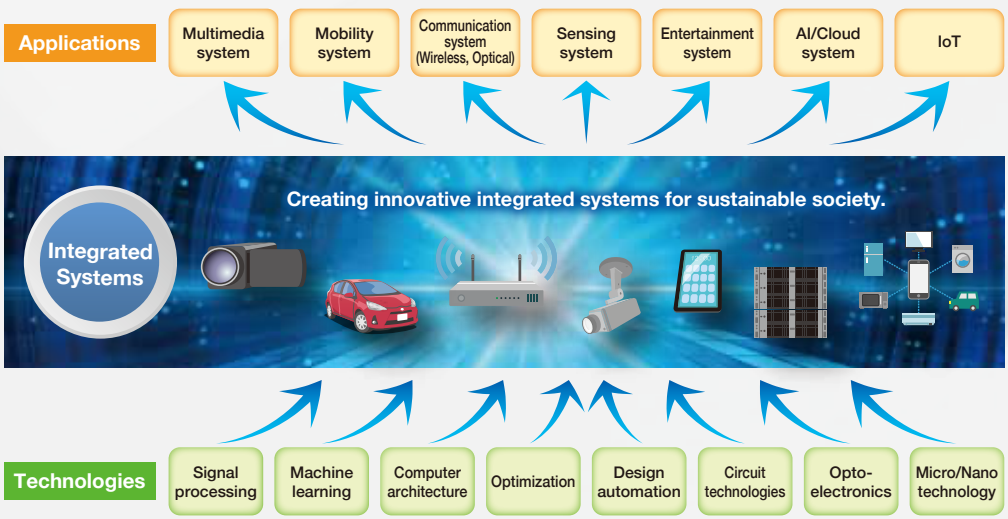
- FPGA Implementation
- Chip Design and Evaluation
- Application to Communication/Image /Acoustic systems

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

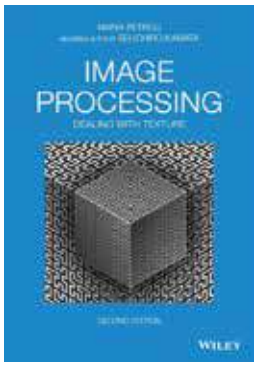
Image Media Lab. (KAMATA Sei-ichiro Lab.)

"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

Functional Thin Films Lab. (UEDA Kenji Lab.)

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

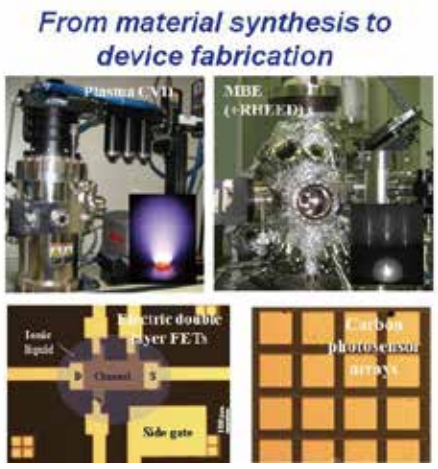
The Functional Thin Films Lab (Ueda Lab) is a relatively new lab that started in 2022. The head of the lab is Kenji Ueda. He obtained his Doctor of Science degree from Osaka University. Ueda began conducting research on thin film materials and devices in his doctoral program and has been working in the 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.

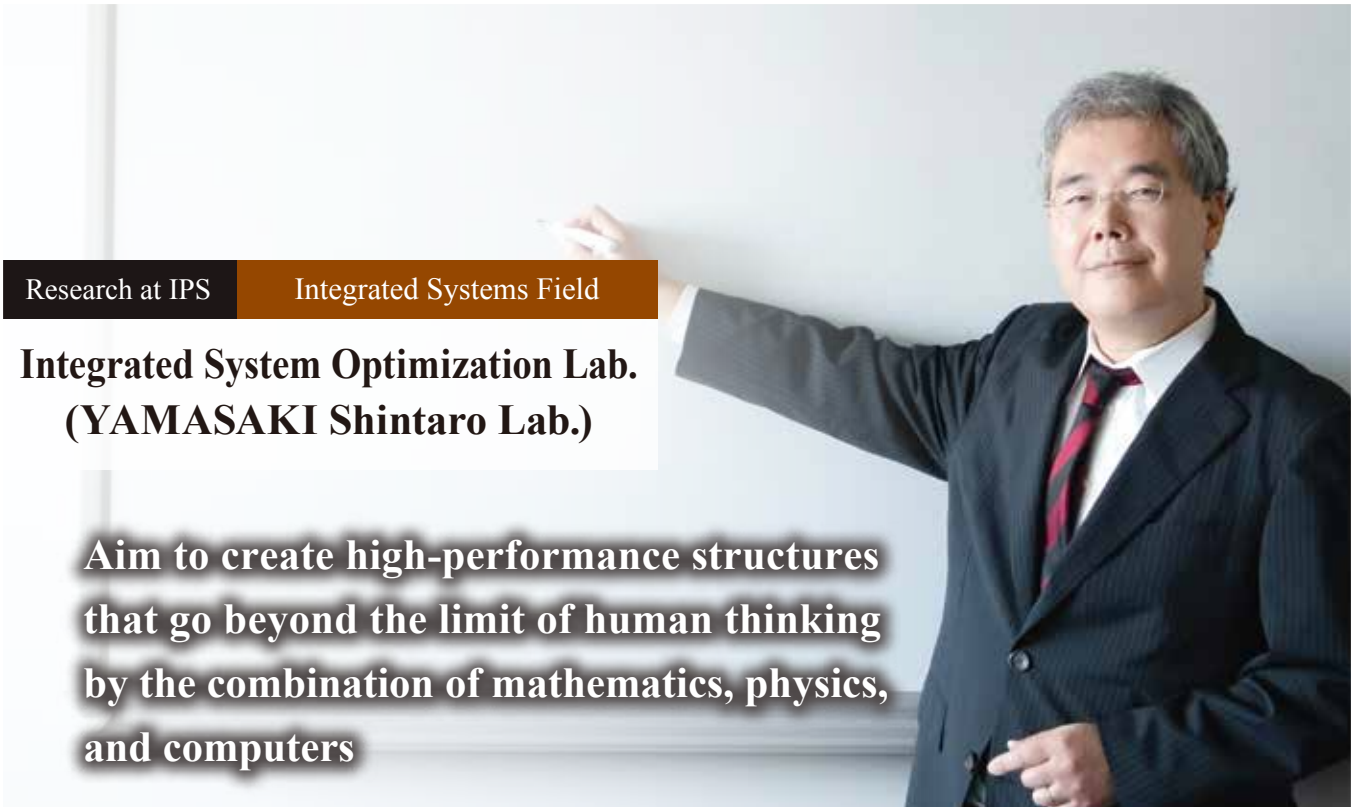
Our lab's research mainly focuses on film growth, new material development, and device production. Come visit us if you are interested. We are always looking for students who want to create new materials and devices by themselves or are interested in nanotechnology. Come research with us!



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:

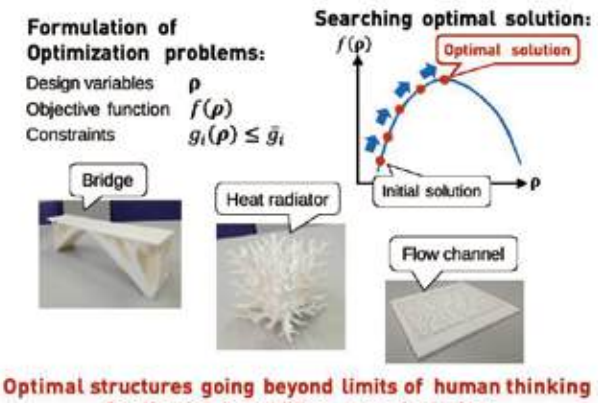
- Design variables - Design factors that can be determined by the designer
- Objective function - An evaluation index of the design target that should be maximized or minimized
- Constraints - Conditions that the design target must satisfy

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 members

Waseda IPS Faculty Search

● Information Architecture Field

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

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

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

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

【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
KAMEOKA, Jun
Ph.D
(Cornell University)

【Research Area】
Biosensor
IOMT
Wearable sensor

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

Professor
LEPAGE, Yves
Dr. Hab
(Grenoble University)

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

【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
TSUBOKAWA, Makoto
Dr. of Engineering
(Hokkaido University)

【Research Area】
Fiber-Optic Sensing Technology
Optical Functional Device Technology
Reliable Network Architecture
Optical Transmission System Technology

【Message】
Optical fiber technologies open up many possibilities for the future. I'm expecting your cool ideas, let's study together.

Web https://tsubokawa.m.w.waseda.jp/

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

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

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

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

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

【Research Area】
Agent Simulation
Human Computer Interaction
Augmented Reality
Internet of Things
Tourism Informatics

【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

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

【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 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 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 Area】
Bioelectronics
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 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 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 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 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 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.

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

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

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

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

【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/

● 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

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

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

【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!

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

【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.

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

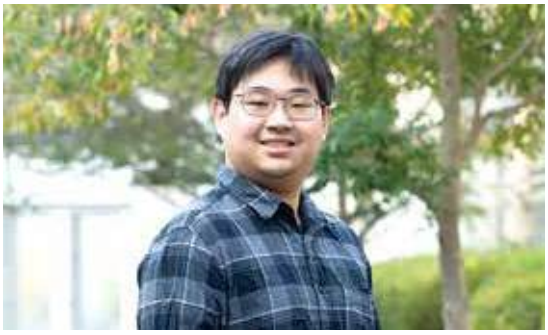
【Research Area】
Terahertz
Nonlinear optics
Electromagnetic field analysis
Metamaterials

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

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

Students

Waseda IPS Messages from Students Search



HUANG, Kuan-Hsun

National Taipei University of Technology
Enrolled in the Master's Program in April 2024 (Fujimura Lab)

IPS is an innovative graduate school that enables students to expand beyond their fields while integrating the latest technologies into their research. Coming from a Smart Manufacturing background, I found IPS the perfect place to bridge my expertise with my passion for AR. The interdisciplinary environment and cross-institutional courses in the academic city connect me with diverse talents, fostering collaboration and innovation. Here, I can explore cutting-edge ideas while maintaining my specialization. IPS not only supports academic growth but also empowers students to push boundaries and redefine their careers in a global, technology-driven landscape.

AKASHI, Maho

Waseda University
Enrolled in the Master's Program in April 2024 (Yoshie Lab)

The Graduate School of Information, Production and Systems (IPS) features a wide range of labs and an environment that allows you to exhaustively study what you want. In this place, where people of different nationalities, ages, and values gather, you can experience personal growth while being inspired by new stimuli every day. In the Community Computing Lab, research is conducted on a wide range of topics, including VLM (Vision-Language Models), AR (Augmented Reality), and robotics. You can freely choose your research topic based on your interests and engage in fulfilling research activities with strong support from senior students and your supervising professor. Regularly held meetings provide a valuable opportunity for engaging in lively discussions with laboratory members and your professor, fostering new ideas and connections. Furthermore, participation in academic conferences and international symposiums is encouraged, allowing you to stay updated on the latest research trends and broaden your global perspective through interactions with researchers from around the world.

WANG, Yuchen

China University of Petroleum
Enrolled in the Master's Program in April 2024
(Ikenaga Lab)

At Waseda IPS, dozens of laboratories cover a wide range of engineering fields, with research topics closely aligned with the latest advancements in technology worldwide. IPS provides an excellent research environment, offering the necessary facilities and equipment to support cutting-edge studies. This makes IPS an ideal place for students who are ambitious about pushing the boundaries of advanced technology in their fields. In my lab, we focus on various image and video information systems, along with related system technologies. Our research spans areas such as computer vision, deep learning, and hardware-friendly algorithm design. We hold weekly lab meetings and seminars, and every month, we have opportunities to interact with professors from overseas or researchers from leading Japanese companies. These discussions often inspire us to approach problems from different perspectives, significantly enriching our research experience.

GATUS, Daniella Marie Beltran

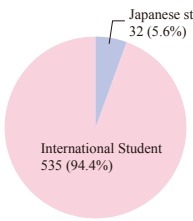
University of the Philippines, Diliman
Enrolled in the Doctoral Program in September 2023
(Miyake Lab)

Graduate School of IPS, Waseda University is composed of a wide range of research fields. As an international scholar, I had the opportunity to expand my horizon in research studies and enjoy Japanese culture at the same time. Your courses of interest will lead you to a specific laboratory, complete with advanced facilities and equipment, where you can enhance your skills and share your technical knowledge in the field. In Current Bioelectronics Laboratory, we focus on breaking the barrier between humans and electronics by producing wearable and biocompatible electronic devices. National and international conferences await and lead to your success!

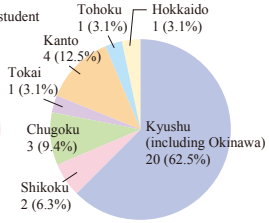
XIE, Jianan

Sichuan Agricultural University
Enrolled in the Doctoral Program September 2024
(Hashimoto Lab)

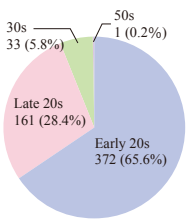
Waseda IPS provides us with an excellent academic platform, equipped with advanced research facilities and distinguished professors. With a wide range of research directions available, students have the liberty to select topics that align with their passions. In the Mobile Robotics Platform Laboratory, 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.



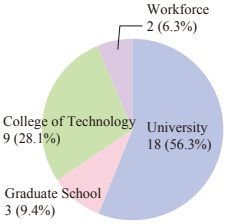
Students by nationality



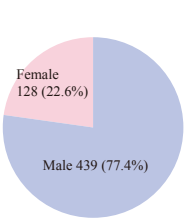
Students by region (Japanese)



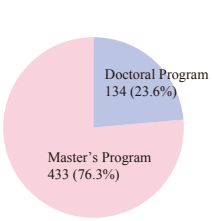
Students by age



Students by school (Japanese)



Students by gender



Students by program

(As of November 1, 2024)

Message from Almni

MIZUGUCHI, Yuiko

Completed a Master's Program in March 2025

Nikon Corporation

The Graduate School of Information, Production and Systems has many international students. About 80% of the students in my lab were international students. By interacting with them, I learned the importance of understanding diverse perspectives. Through this experience, I developed the ability to collaborate while respecting different cultures and values. Additionally, since communication with international students was mailny done in English, I have not only improved my English ability but also realized the significance of language itself. As a result, I have broadened my global outlook and expanded my international perspective. Moreover, the research environment was exceptionally well-equipped, providing me with opportunities to conduct various experiments using the latest equipment and receiving attentive support. This enabled me to deepen my research, acquire technical skills, and even make new discoveries. I believe that the Graduate School of Information, Production, and Systems provides an ideal environment for those who wish to advance their research while utilizing English.

NINOMIYA, Toshinori

Completed a Master's Program in March 2024

Mobile System Business Division,
Sony Semiconductor Solutions Corporation

At IPS I developed the mindset to actively incorporate new knowledge and perspectives, and I continue to maintain this mindset to this day.
IPS provided me with the opportunity to acquire advanced expertise and enabled me to experience its most notable feature—its global environment. When I first enrolled, I was very nervous about speaking in English with people from different backgrounds, but through discussions in seminars and lectures I was able to adapt to the new environment. Now I'm glad that I leaped into that environment. Also, conducting research involving those around you is important and so is being in an environment where teachers and other students share their insight and know-how. The mindset to actively incorporate new knowledge—which includes involving and sharing with others—is very useful in my current job, where it is essential to work with a variety of other people.
In this way, my studies and experiences at IPS provided me with more than just academic growth, it was also an opportunity to improve my ability to work with others, which includes intercultural understanding and language, and I am confident that it will be a great asset in my life and career going forward.

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

Assistant 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 Projected Subjects

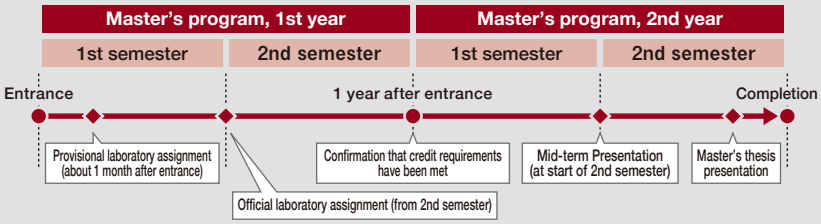
(Year 2026)

Waseda IPS Syllabus Search

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.

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
- Probability and Statistics
- Theory of Constraint Processing
- Digital Signal Processing
- Technical Writing &Presentation
- 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
- Optical fiber engineering
- 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 Industrial and Management System Engineering
- Fundamentals of Organic Electronics Ⅱ
- Crystal engineering

Advanced Subjects

Information Architecture

2 credit courses during the spring semester

- Natural language processing (NLP)
- Human-Robot Interaction
- Machine translation technology
- ◆Industrial Marketing (Spring Quarter)
- ◆Theory of collective intelligence (Summer Quarter)
- Scheduling Algorithms
- Biosensor Engineering
- Optical transmission technologies
- ★Special Exercise of Community Computing I
- ●Image Processing
- ●Neural Networks

2 credit courses during the fall semester

- Bioengineering
- Fundamental Biosystems
- Bioinformatics
- Information Organization
- Fiber optic measurement technology
- ★Special Exercise of Community Computing II
- ◆Smart factory I (Fall Quarter)
- Information Design
- CPS Prototyping
- ●Pattern Recognition
- Internet of Things and Big Data
- Information Security Engineering

Production Systems

2 credit courses during the spring semester

- ●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
- ★Special Exercise of Organic Electronics II

2 credit courses during the fall semester

- 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
- ★Special Exercise of Organic Electronics Ⅰ

Integrated Systems

2 credit courses during the spring semester

- 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

2 credit courses during the fall semester

- ●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

2 credit courses during the spring semester

- ◆Operations Management as a Strategic View Point_Spring

2 credit courses during the fall semester

- ◆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

Information Architecture

2 credit courses during the fall semester

- Robotics and mechatronics
- Smart Industry
- Community Computing
- Data Engineering
- Network Intelligence and Security
- Computational Neuroscience
- Multimedia Engineering
- Example-based machine translation/NLP
- Bio Information Sensing
- Advanced fiber optic technologies

Production Systems

2 credit courses during the fall semester

- Micro and Nano Fluidic Device
- Current Bioelectronics
- Biomedical Engineering
- Mobile Robotics Platform
- Semiconductor Materials and Device Engineering
- Mechanical System Design
- Design Engineering and System
- Information and Production Process
- Functional Thin Films

Integrated Systems

2 credit courses during the fall semester

- 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

Information Architecture

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

- 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
- Fiber-optic systems A,B,C,D
- Network Intelligence and Security A,B,C,D
- Community Computing A,B,C,D

Production Systems

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

- Design Engineering and System A,B,C,D
- Mobile Robotics Platform A,B,C,D
- Micro and Nano Fluidic Device A,B,C,D
- Bioelectronics 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
- Functional Thin Films A,B,C,D

Integrated Systems

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

- 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
- High-Level Verification Technologies 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：https://www.wsl.waseda.jp/syllabus/JAA101.php?pLng=en

Examination Regulations

April or September Admission, 2026

Waseda IPS Admission Search

For details, please refer to the Admission Guide. You can download the Admission Guide and the documents needed for application from the IPS Website. ▶https://www.waseda.jp/fsci/gips/en/applicants/admission/application/
※Admission guideline could be changed without notification.

Programs and Degree of IPS

Major / Program	No. of Enrollments	Capacity	Admission	Degree
Information, Production and Systems Engineering Master's Program	200	400	April, September	Master of Engineering
Information, Production and Systems Engineering Doctoral Program	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 & September) : Master's program : 200 / Doctoral program : 20

Domestic Application [Master's program and Doctoral program]

[April 2026 Admission]

	Application Period (Application must be postmarked by the last day.)	Examination Date (One of the days)	Results Announcement	Period for the First Admission Procedure (Documents must arrive by the final day)	Period for the Second Admission Procedure
July Examination	June 2, 2025 (Mon) ~ June 20, 2025 (Fri)	July 11, 2025 (Fri) July 12, 2025 (Sat)	July 18, 2025 (Fri)	October 1, 2025 (Wed) ~ October 15, 2025 (Wed)	Mid February, 2026
November Examination	September 29, 2025 (Mon) ~ October 10, 2025 (Fri)	November 14, 2025 (Fri) November 15, 2025 (Sat)	November 28, 2025 (Fri)	November 28, 2025 (Fri) ~ December 12, 2025 (Fri)	

[September 2026 Admission]

	Application Period (Application must be postmarked by the last day.)	Examination Date (One of the days)	Results Announcement	Period for the First Admission Procedure (Documents must arrive by the final day)	Period for the Second Admission Procedure
November Examination	September 29, 2025 (Mon) ~ October 10, 2025 (Fri)	November 14, 2025 (Fri) November 15, 2025 (Sat)	November 28, 2025 (Fri)	April 1, 2026 (Wed) ~ April 15, 2026 (Wed)	Mid August, 2026
July Examination	May 25, 2026 (Mon) ~ June 5, 2026 (Fri)	July 10, 2026 (Fri) July 11, 2026 (Sat)	July 24, 2026 (Fri)	July 24, 2026 (Fri) ~ July 31, 2026 (Fri)	

Overseas Application [Master's program and Doctoral program and G-course (for partner university nominees only)]

[April 2026 Admission]

	Application Period (Documents must arrive by the final day)	Results Announcement	Period for the First Admission Procedure (Documents must arrive by the final day)	Period for the Second Admission Procedure
July Examination	June 2, 2025 (Mon) ~ June 20, 2025 (Fri)	July 18, 2025 (Fri)	October 1, 2025 (Wed) ~ October 15, 2025 (Wed)	Mid February, 2026
November Examination	September 29, 2025 (Mon) ~ October 10, 2025 (Fri)	November 28, 2025 (Fri)	November 28, 2025 (Fri) ~ December 12, 2025 (Fri)	

[September 2026 Admission]

	Application Period (Documents must arrive by the final day)	Results Announcement	Period for the First Admission Procedure (Documents must arrive by the final day)	Period for the Second Admission Procedure
February Examination	December 8, 2025 (Mon) ~ December 19, 2025 (Fri)	February 20, 2026 (Fri)	April 1, 2026 (Wed) April 15, 2026 (Wed)	Mid August, 2026
June Examination	April 13, 2026 (Mon) ~ April 24, 2026 (Fri)	June 5, 2026 (Fri)	June 8, 2026 (Mon) ~ June 19, 2026 (Fri)	

Conditions and Selection Methods for Each Examination Category

IPS has three examination categories. In evaluating applicants, emphasis is placed on not only their specialized knowledge, but also their motivation and ability to identify and address issues.

Examination Category	Condition		Documents	Selection ※1	
	Master's Program	Doctoral Program		Documentary Examination	Interview
General Application	—	—	・Research plan ・Overview of bachelor's / master's thesis, or overview of work achievements ・Grade transcript ・Certificate of English ability	Required	Required
Recommended Application	・You must be recommended by a thesis advisor, or a person who can evaluate your academic ability. ・You must have an excellent academic record. ※No specific grade standard is set.	・You must be recommended by a faculty advisor for your master's thesis, or a person who can evaluate your academic ability. ・You must have an excellent academic record. ※No specific grade standard is set.	・Research plan ・Letter of recommendation (Self-recommendation not acceptable) ・Overview of bachelor's / master's thesis, or overview of work achievements ・Grade transcript ・Certificate of English ability	Required	Required
Workforce Application	・A person currently employed, or previously employed, in the private sector, government, education, etc. ・A person who has demonstrated outstanding professional achievements.	・A person currently employed, or previously employed, in the private sector, government, education, etc. ・A person who has demonstrated outstanding professional achievements.	・Research plan ・Letter of recommendation (Self-recommendation is acceptable) ・Overview of work achievements ・Grade transcript ・Certificate of English ability	Required	Required

※ Applicants for the Overseas Application will, in principle, be screened based on document review only, without an interview.

Inquiry Form

◀ For inquiries regarding admissions, please contact us through this inquiry form.

For inquiries regarding the curriculum ▶ Office gakumu-ips@list.waseda.jp +81-93-692-5017

※ If you are applying for Overseas Application, as a rule, only a document screening will be conducted

Tuition and Fees (Admission 2026)

Waseda IPS Tuition Search

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.

Waseda IPS Scholarship Search

Scholarship Programs

Scholarship programs offer international students a secure research life

IPS is prepared to assist you in your university life after entrance with a wide array of scholarship programs including Waseda's own university scholarships, as well as scholarships offered by the government or private foundations. Of special interest to international students at IPS are scholarship 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 2024. For more detailed information on this and related subjects, please refer to the scholarship information on IPS web site after entrance.

A list of 2024 Scholarships

※"－" : Not applicable

Name of Scholarship					Amount		Duration	Number of Scholarship Student	
				Interest	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	9	0
		Japan Student Services Organization Type 2	Loan	Yes	¥50,000～¥150,000 ／ Month		1 to 3 years	4	0
		Japan Student Service Organization Special Increased Scholarship at School Entry	Loan	Yes	¥100,000～¥500,000 ／ lump-sum payment		Lump sum	2	0
	Waseda University Scholarship	Azusa Ono Memorial Scholarship	Provision		¥400,000／Year	–	1 year	5	–
		Okawa Isao Scholarship	Provision		¥250,000／Year	–	1 year	1	–
		Waseda Almuni Scholarship	Provision		¥400,000／Year	–	1 year	1	–
	Scholarship offered by private foundation	Urakami Scholarship	Loan		¥40,000／Month	–	Until the end of regular course	1	–
		Scholarship by The Mitsui Foundation for Advancement of Tool and Die Technology	Provision		¥80,000／Month	–	Until the end of regular course	0	–
For International Students	Waseda University Scholarship	Waseda University Partial Tuition-Waiver Scholarship for Privately Financed International Students	Reduction		50%	–	Once a year	9	–
		Reserved Scholarship for Successful International Examinees	Provision		¥500,000／Year	–	2 year	19	–
		Azusa Ono Memorial Scholarship for International Students	Provision		¥400,000／Year	–	1 year	8	–
		Tahara Souichiro Scholarship for International Students	Provision		¥400,000／Year	–	1 year	1	–
		Waseda University Emergency Scholarship	Provision		¥400,000／Year		1 year	1	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	5	1
		SGU Japanese Government Scholarship	Provision		¥144,000～¥145,000／Month+Tuition		Up to 1 year	0	0
		Honors Scholarship for Privately Financed International Students	Provision		¥48,000／Month		Up to 1 year	44	2
		Postgraduate Study Abroad Program by China Scholarship Council	Provision		–	¥150,000／Month+Tuition	Until the end of regular course	–	11
		CSC Special Selection for 1st year Student of Doctoral Programs	Provision		–	¥150,000／Month+Tuition	Until the end of regular course	–	2
		Rotary Yoneyama Memorial Foundation	Provision		¥140,000／Month		1 year	0	0
		Fukuoka International Exchange Foundation Foreign Student Scholarship	Provision		¥24,000／Month		1 year	4	0
		KSRP Scholarship by FAIS	Provision		¥300,000／Semester		1 year	11	0
		The Kitakyushu-Dalian Friendship International Students' Scholarship	Provision		¥20,000／Month		1 year	1	0
		Otsuka Toshimi Scholarship Foundation	Provision		¥100,000／Year		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		–	¥100,000／Year	1 year	–	0
		Scholarship for Fostering Researchers in Doctoral Programs	Provision		–	¥500,000／Year	1 year	–	64
	Research Encouragement Fund.etc	Waseda University Open Innovation Ecosystem Program for Pinoneering Research (W-SPRING)	Provision		–	living and reserch expenses Maxmum ¥2,900,000／Year	Until the end of regular course	–	41
		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	–	2

(¥ : JPY)

〈As of December, 2024〉

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: https://www.waseda.jp/inst/scholarship/

Student Life

Waseda IPS Access Search

Kitakyushu, a new venue for academic life

Kitakyushu, a city of about one million inhabitants located on the northern tip of the island of Kyushu, is home to IPS. The city enjoys the geographical advantage of close proximity to China and Korea, which has made it a focal point for exchange with continental Asia since earliest times. Today, under the "Kitakyushu Renaissance Concept" which brings together academia and regional industries, the city is reinventing itself as an international city of technology. Kitakyushu is also blessed with an abundance of natural assets including seashore, mountains, and greenery, which grace many spots throughout the city. You can enjoy a variety of sports and leisure activities, as well. All of these things, along with lower living costs than those of Capital region, enable students to pursue a rewarding and pleasant academic life here.

Kitakyushu Science and Reserch Park, home of IPS

- Four universities and ten 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 Technology Development and Exchange Center
This facility supports development of new technologies in the fields of Robots and Car Electronics and promotes DX.

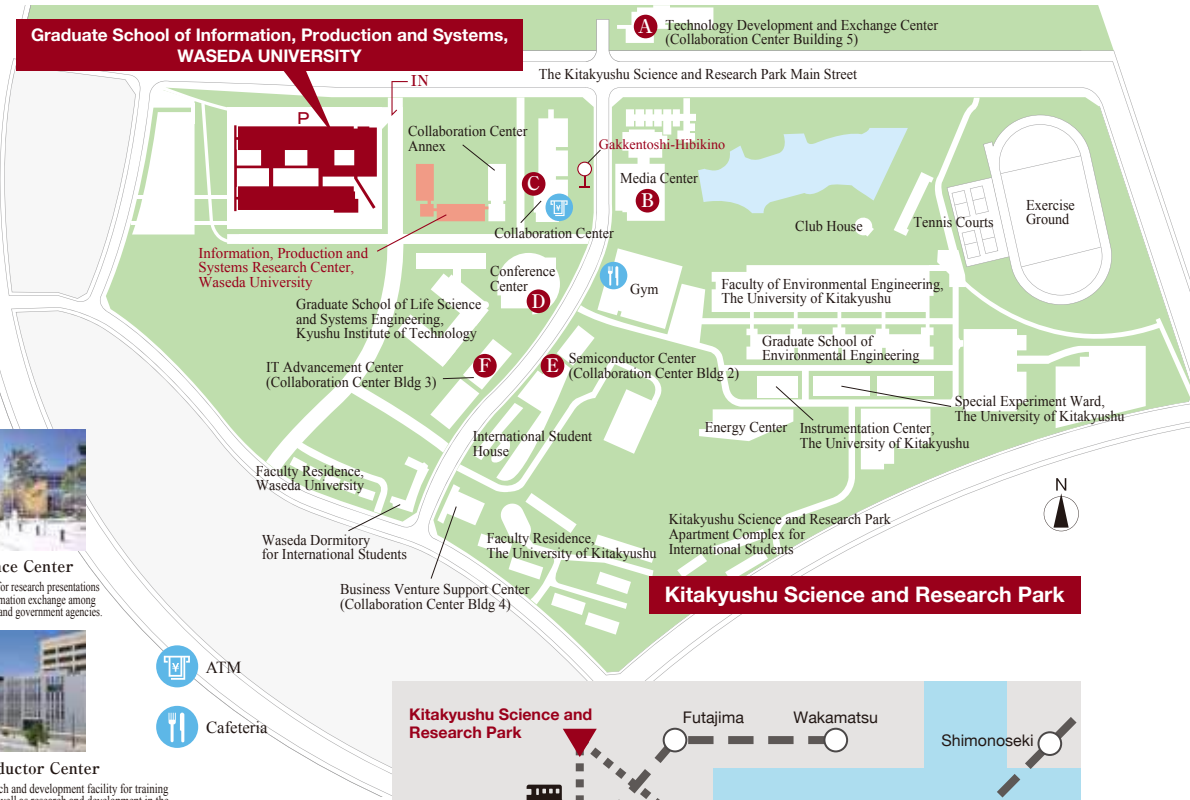
B Media Center
(Library, Information Process Facility)
This is the multimedia station where data is collected and transmitted.

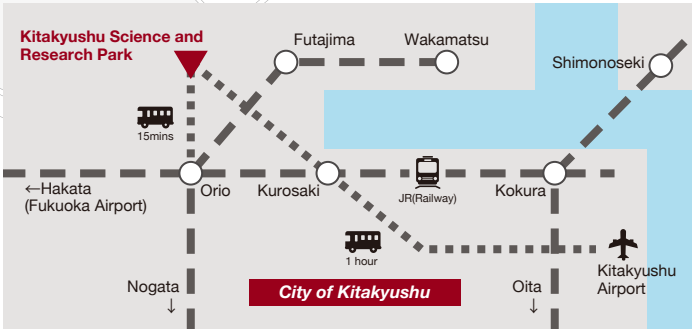
C Collaboration Center
This is the core facility for joint research between industry and universities.

D Conference Center
This hall is designed for research presentations and activities of information exchange among industry, universities and government agencies.

E Semiconductor Center
This facility supports reseach development in semiconductor microfabrication technology.

F Semiconductor Center
This is a joint research and development facility for training human resources as well as research and development in the field of network 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, scholarship and dormitory Office gakumu-ips@list.waseda.jp +81-93-692-5017

早稲田大学
大学院情報生産システム研究科

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