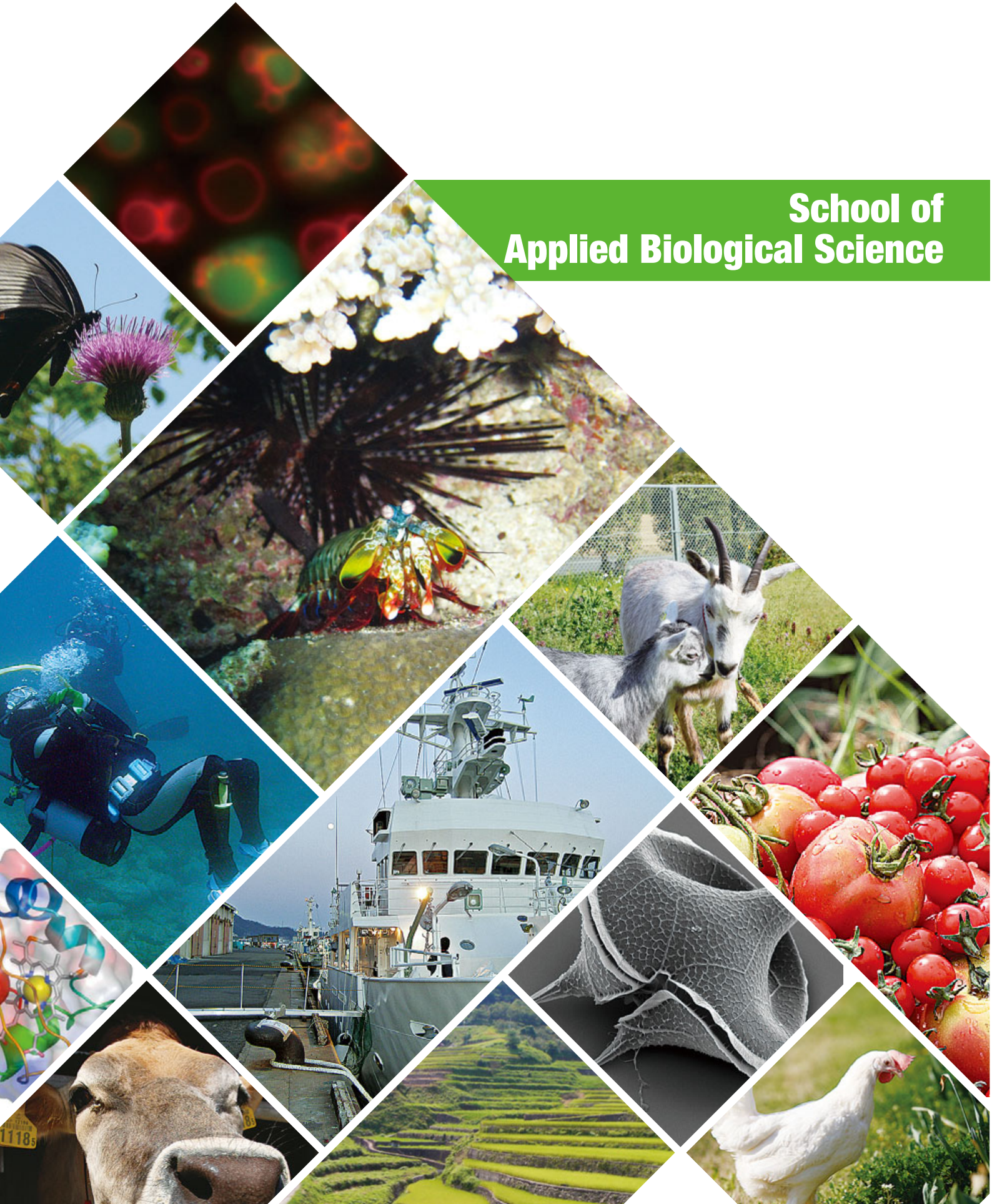
HIROSHIMA UNIVERSITY

School of Applied Biological Science



Toward the Betterment of Global Food Production and the Environment

Message from the Dean

Toward the sustainable production of foods and the utilization of biological resources

Yoshihiro Sambongi, D.Agr.
Dean, School of Applied Biological Science, Hiroshima University

What do you think about Applied Biological Science? We can briefly define it as an academic area pursuing "science for life and birth." The School of Applied Biological Science in Hiroshima University is now aiming at educating students who can contribute to society equipped with broad and relevant perspectives for sustainable food production and biological resource utilization. Of course you can learn basic science related to industries for agriculture and fishery. A wide variety of areas such as molecular biology, food development and distribution, and science for environments that nurture living organisms is within our scope. Let's study together!

Academic Principles

To nurture individuals who can contribute to the continued existence of humanity and welfare enhancement, the School of Applied Biological Science conducts education and research on the basis of the following principles:

***Conservation of the biosphere environment**
***Food production in harmony with the environment**
***Creation of healthy and abundant food**
***Creation of knowledge relating to bioresources**
***Contribution to regional and international communities**

Aims

The School of Applied Biological Science pursues education and research by improving and creating knowledge in agriculture relating to organisms and the environment, toward sustainable food production and the effective use of bioresources in harmony with the environment. In so doing, the School aims to foster individuals who can play significant roles in and contribute to society, capitalizing on their scientific knowledge in the above fields and their broad, global perspective.

Admission Policy

The School of Applied Biological Science conducts education and research relating to sustainable food production and efficient use of bioresources in harmony with the environment. With the aim of producing graduates who can work for society with a deep scientific knowledge in these fields and with a broad perspective, we are looking for the following type of students.

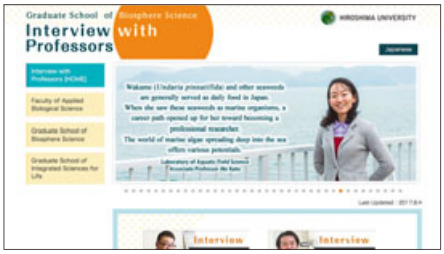
1. **A person who has acquired a thorough grounding in basic high-school level academic study, with particular strength in science and mathematics subjects**
2. **A person who has a high awareness of food production and environmental issues**
3. **A person who aims to engage in work related to food production or the environment, and seeks in the future to play an active role in local and international communities**

Web

RESEARCHER

https://home.hiroshima-u.ac.jp/gsbstop/taidan/en/

Interview with Professors



https://home.hiroshima-u.ac.jp/gsbstop/interview/en/

Research Facilities

for student education and research

Training Factory for Food Processing

Animal Experimental Farm

Conservation and Breeding Facility for Native Japanese Chickens

Experimental Field

Higashi-Hiroshima Campus

https://www.hiroshima-u.ac.jp/en/access/higashihiroshimacampus

Training and Research Vessel TOYOSHIO MARU

Higashi-Hiroshima Campus — Car, 45 min — Training and Research Vessel

7-4, Takara-machi, Kure, Hiroshima, 737-0029
Phone: +81-82-323-4853

Fisheries Research

Higashi-Hiroshima Campus — Car, 45 min — Fisheries Research

5-8-1 Minato-machi, Takehara, Hiroshima, 725-0024
Phone: +81-84-624-6780

Research Farm

Higashi-Hiroshima Campus — Car, 5 min — Research Farm

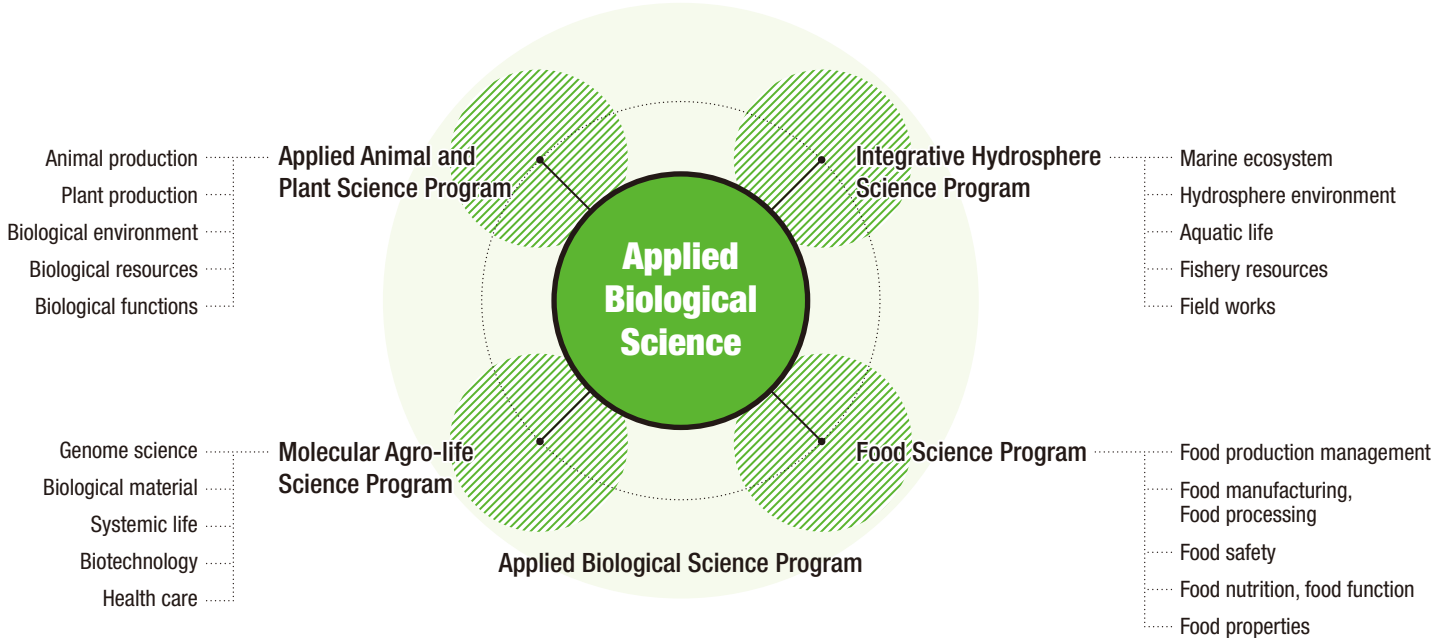
2-2965 Kagamiyama, Higashi-Hiroshima, Hiroshima, 739-0045
Phone: +81-82-424-7994

Program Outline

Toward the sustainable production of foods and the utilization of biological resources

Develop students who can contribute to society with a broad perspective

The School of Applied Biosphere Science aims to acquire a wide range of knowledge and wisdom from natural science and social science related to biological production. Specifically, it seeks (1) basic knowledge related to food production, biological resources, biological environment, biotechnology, (2) actual field science experience, (3) understanding of bioethics and ethics, (4) languages such as English to provide education aimed at acquiring information processing skills.



1st year		2nd year		3rd year		4th year	
1st semester	2nd semester	1st semester	2nd semester	1st semester	2nd semester	1st semester	2nd semester
General Education Courses		Basic Specialized Courses		Specialized Courses		Graduation research activities	

Employment
Higher education

1st year **Focus on liberal arts subjects.**

The basic subjects that form the basis of the special subjects are “Cultural Education,” along with liberal arts seminars, peace subjects, introduction to university education, foreign language subjects, information subjects, area subjects, health sports subjects, etc. that cultivate rich human experience supported by a wide range of education.

2nd year **Learn specialized basic subjects and belong to each program.**

You will take a wide range of specialized basic subjects before you study each area of specialization. In the first semester, you will take specialized basic subjects and experiments / practices related to bioproduction science. In the second half, you will be assigned into one of four programs, and you will begin to learn more about your area of expertise.

3rd year **Learn more about your area of expertise and belong to a laboratory.**

In the first semester, you will take classes, experiments and practical training related to the specialties of each program. Finally, you will choose your supervisor on the second semester, and start working on advanced research subjects for the conduct of your graduation thesis with your supervisor and graduate students. In the process, cultivate the ability of finding and solving problems, and acquire the presentation ability to explain your work.

4th year **Focus on graduation research activities.**

Research activities will be in full swing, and research results will be submitted as graduation thesis. Hiroshima University has a well-developed career support program with a view to finding a job, and there are many alumni in food, medicine, chemical manufacturers, environment related companies, teachers and government officials all over the country. Every year, many graduates go on to graduate school.

License and Qualification:

*High school teacher's license (Science) *Food hygiene supervisor *Food hygiene manager *Curator *Class A dangerous goods handler

Integrative Hydrosphere Science Program

Toward the development of human resources who can support the fisheries industry in Japan and the world

The hydrosphere, including seas and rivers, is inhabited by many valuable water creatures which provide great benefits to humanity. To sustainably utilize such benefits, it is indispensable to broadly understand aquatic creatures and the environment surrounding them. At the same time, an attitude of pursuing studies in keeping with real-world problems while listening directly to the voices of fishermen and researchers is also important.

This program provides students with lecture classes and opportunities to carry out experiments and fieldwork, so that they can (1) study basic knowledge on the aquatic environment and material cycles in aquatic ecosystems, (2) systematically learn basic knowledge and research methods necessary for propagation and farming of marine resources and environmental conservation, and (3) acquire capabilities to consider solutions to issues in production and research sites of biological resources in the hydrosphere from an international point of view, thereby aiming to foster human resources who can respond to diversified social needs.

Pick Up

Sustainable use of aquatic ecosystem

Recently, marine environmental changes such as seawater temperature increases and oligotrophication have led to the decrease in quantity and quality of fishery resources, thereby resulting in serious problems. In this program, we are engaged in survey and research on fishery production and marine organisms in collaboration with local public organizations while gathering opinions directly from local people.

Applied Animal and Plant Science Program

To create food and a healthy lifestyle by using animals and plants effectively

To obtain food and other products that are excellent in quality and safety from animals and plants, it is necessary to thoroughly understand vital functions of animals and plants, and systematically acquire skills concerning their production and use. By combining them, it becomes possible to gain insight into a broad range of fields relating to animal and plant production and identify problems and work out solutions.

This program provides students with lecture classes, and opportunities of carrying out experiments and field practices so that they can acquire knowledge and skills for contributing to producing food and biological resources from animals and plants and developing capabilities to solve problems, and work on a global scale by learning (1) animal physiological structure, (2) improvement of genetic capacity and artificial control of reproduction of animals, (3) feed for animals and their breeding environment, (4) bioethics and animal welfare and (5) plant physiology and structures and functions of the environment that support sustainable plant production.

Pick Up

Utilization of soil function

Soils support plant growth by proriding nutrient and water supply and play important roles as essential sites of material cycling. For sustainable plant production, we aim to enhance the soil functions through analysis and utilization of organic matter and beneficial microorganisms in soils.

Applied Biological Science Program

Interdisciplinary education in English for fostering human resources who

In this program, students learn liberal arts education subjects in English and other foreign languages that are common to all schools, and thereby not only lay the foundation for all fields o language skills that enable them to work in the local and international job markets.

From the second semester in the second year, students learn subjects in extensive fields of learning provided by the School of Applied Biological Science. More specifically, each student ta Hydrosphere Science Program, the Applied Animal and Plant Science Program, the Food Science Program and the Molecular Agro-life Science Program, as part of a curriculum tailored fo thereby obtain broad knowledge and skills necessary in the applied biological science and works on a graduation thesis while consulting with an advisor in a specific major field. In the c solutions, and express the results in English.

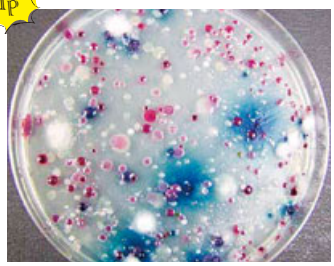
Furthermore, students acquire an ability to work on a global scale by taking special lecture classes together with exchange students from overseas cooperating schools, lecture classes, pra and overseas cooperating schools (packaged subjects studied at overseas cooperating schools).

Food Science Program

Toward the creation of healthy and rich dietary culture

This program aims to develop human resources who can contribute towards creating a healthy and rich dietary culture. To this end, it provides students with specialist lecture classes, and opportunities to carry out experiments, receive practical training for food production and to visit food factories so that they can obtain basic knowledge and skills ranging from sustainable food production and distribution management to development and manufacturing of safe, highly functional and high-quality food, and applied skills for solving various problems in the food industry.
Specific subjects that students learn include: (1) production management and distribution of food, (2) manufacturing and processing of food, (3) food safety, (4) nutrition and functionality of food, (5) physical properties and flavor of food, and (6) effective use of food resources.

Pick Up



Sciences on food safety/security

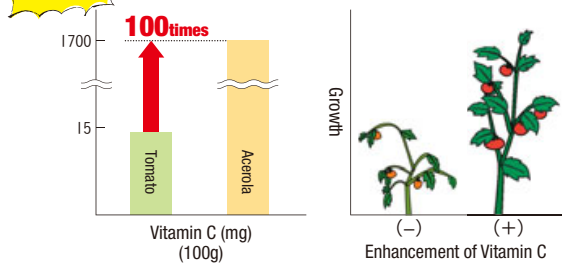
Food poisoning is a major problem in food safety. Several natural plant substances prevent food poisoning because of their antimicrobial activities. We aim to protect human health by repelling food poisoning bacteria and viruses with eco-friendly natural plant substances.

Molecular Agro-life Science Program

To elucidate biotic functions and create state-of-the-art biotechnology

This program aims to clarify sophisticated functions of various living creatures, including microorganisms, plants and animals, using state-of-the-art technologies at the molecular or cellular level of genes and proteins, and apply biotic functions for solving food, medical and environmental problems.
In this program, students can learn necessary knowledge and skills for clarifying biotic functions and their significance in nature and developing leading-edge biotechnology, and obtain capabilities to apply such knowledge and skills by (1) elucidating diversified life phenomena of microorganisms, plants and animals, (2) conducting basic studies for development of valuable enzymes, potent antibodies and anticancer drugs by applying biotic functions, (3) creating valuable transgenic plants and animals using gene recombination technologies and cellular engineering and (4) learning about chemical substances produced by microorganisms, plants and animals.

Pick Up



Stress resistant plants with high vitamin C

Vitamin C is of vital importance for plants as well as human health. Plants with a high vitamin C content are resistant to disease and unfavorable environmental conditions. For creating vitamin C-rich plants, we have continued detailed studies on acerola that is known for its high vitamin C content.

can work in the global community

of learning provided by the School of Applied Biological Science, but also acquire

kes lecture classes and experiment exercises of major subjects in the Integrative
or a major field of each student's choice (packaged major subjects by field), and
course of this process, students acquire an ability to identify problems, work out

actical training and project studies that are provided at both Hiroshima University

Active Graduates

Ayano MASAKANE (graduated in March 2018)
JA NISHINIHON KUMIAI SHIRYOU Corporation

It was attractive for me to learn agriculture relating to organisms and environment, and then acquire the specialized knowledge and skill at School the of Applied Biological Science.
I came to think about getting a job where I could make use of what I have learned at least, and it should be the field of agriculture. At Hiroshima University, I was researching plant root hair, but it is a completely different field in livestock that I am dealing with at present. Since I had an internship at a farm while I was in school, I chose the current workplace without much hesitation. It is recommended that those who have not yet decided on their career or specialty or who are interested in various things can decide their majors after studying the general subjects.

Saki TAGUCH (graduated in March 2019)
euglena.Co.Ltd.

My dream is to make products friendly to mankind and the environment using the power of microorganisms. After graduating from National Institute of Technology, I transferred to Hiroshima University and began my junior year at the School of Applied Biological Science. I was very much inspired not only by specialized subjects like studying things at the molecular level, but also by meeting those who studied different topics in the School. Those friends had a strong sense of purpose for what they liked to do and what they liked to learn in their respective chosen fields such as animals, fisheries, food, and so on. They helped me affirm what I would really like to do. Once again, I became confident with my dream. The School of Applied Biological Science is the place where you could discover what you would like to do through gaining access to various fields of study and making friends with each other.

Tomo TAKIYAMA (graduated in March 2016)
Domoto Co.Ltd

My graduation thesis started from catching fish in the sea and making an experimental device by myself. The theme of my research was “the sight of fish that live in the estuary.”
I struggled to shoot many movies of the action of fish and dissect the fish’s eye of a few millimeters. Through research, I learned the importance of continuing to think and reinvigorute myself without giving up even on difficult things. The skills cultivated in the laboratory are also used in my current job of product development.
Besides research, I enjoyed studying in Thailand under the AIMS-HU program. I made many Thai friends at that time. Currently I work for a food company that has a factory in Thailand.

Yuta KUSAKABE (graduated in March 2011)
S&B Foods Inc.

Because I had a dream to work in food product development, I applied for entrance to the School of Applied Biologial Science, which has the Food Science Program. During my university days, I mostly learned about food manufacturing and processing. I also involved myself in a study of “establishment of a novel method for food manufacturing”. As a result, I received a Best Poster Award, a Best Paper Award, and a Technological Development Award from scientific societies. In this faculty, there is a program focusing on “Food” and an environment providing studying with high motivation. After graduating, I worked in a long-cherished job in food product development (ex. retort-pouch curry). Now I am doing the job of suppling raw materials for products. The ability to move forward and the broad knowledges learned through study and lectures greatly helped me at my current job.

Graduate School of Integrated Sciences for Life

Organization

The Graduate School of Integrated Sciences for Life has a single division, which consists of seven fundamental graduate degree programs. The seven programs, each of which features a systematic curriculum framework, are established by separating a broad spectrum of biology and life sciences-which used to be divided into the four traditional academic disciplines of science, engineering, agriculture and medicine-from the viewpoint of educational impacts and the needs of modern society. Each of these seven programs has distinctive keywords and shares some of them with other diploma programs, thereby enabling the formation of a group of complementary and integrated programs.

Admission Policy

The Graduate School of Integrated Sciences for Life, based on its Diploma Policy and Curriculum Policy, expects to admit master’s students as described below.

1. **Have strong eagerness to learn, who wish to acquire deep expertise and understanding in a wide range of fields from the basics to applications that include medical treatment in the areas of study related to biology and life sciences, and who have basic academic knowledge for that purpose;**
2. **Wish to acquire interdisciplinary problem-searching and problem-solving abilities, which can integrate and link different fields, along with broad general education, without being constrained by conventional frameworks of research fields, and to create “science that can guide sustainable development”; and**
3. **Are aware of both academic fields and the real world, and who wish to acquire international and interdisciplinary communication skills as well as practical capabilities in society.**

More than half of the graduates go on to graduate school. **https://www.hiroshima-u.ac.jp/en/ilife**

Admission Information

Entrance Examination for International Applicants (Exam for Privately-Funded International Students)

Application Eligibility

Students who do not possess Japanese citizenship must take the "Examination for Japanese University Admission for International Students (EJU) (required subjects and designation of the question language vary according to the School)" and the "Designated Official English Proficiency Test" and must satisfy one of the necessary conditions as follows:

(1) Completion of 12 years of formal education abroad, expected completion by March 31 of the year of admission or a recognition by the Ministry of Education, Culture, Sports, Science and Technology, as having completed the equivalent education.

(2) Attainment of an International Baccalaureate by the International Bureau of Baccalaureate; must be 18 years old by March 31 of the year of admission.

(3) Attainment of the qualification of Abitur; must be 18 years old by March 31 of the year of admission.

(4) Attainment of the Baccalaureat de l'Enseignement du Second Degree; must be 18 years old by March 31 of the year of admission.

(5) Attainment of the General Certificate of Education (GCE) Advanced Level (A Level), which is recognized as entry qualification for universities in the United Kingdom and Northern Ireland; must be 18 years old by March 31 of the year of admission.

(6) Completion of 12-year education curriculum in a school accredited by the Western Association of Schools and Colleges (WASC), the Association of Christian Schools International (ACSI), or the European Council of International Schools (CIS); must be 18 years old by March 31 of the year of admission

Students must fulfill the designated requirements of the school.

Note: It is required to submit an official score from one of the designated official English Proficiency Tests listed below. (This is subject to change from year to year.) Cambridge English, EIKEN, GTEC CBT, IELTS (Academic Module), TEAP (4skills), TEAP CBT (4skills), TOEFL iBT®, TOEIC® L&R

Selection

Selection will be based on "Examination for Japanese University Admission for International Students (EJU)" and "Designated Official English Proficiency Test" as well as the results of the examinations proctored by Hiroshima University and a review of the application documents.

Admission Guide
https://www.hiroshima-u.ac.jp/en/international/admissions/admission_guide

Support and Resources

Hiroshima University will provide multiple academic staff for each student and the academic staff support for all aspects of university life, such as guidance in learning and use of campus facilities from admission to graduation.

Student Support Office

Supports students in many ways. Not only about the class, it also issues various certificates, and responds to various consultations.

Student Plaza

Student plaza has various centers that provide specialized support such as perform life counseling, educational counseling, health counseling, job counseling, and so on.

Accommodation Facilities

Hiroshima University operates the HU International House and HU Ikenoue Student Dormitory, which provide lodging facilities for students.

Health Management Center

Helps students manage and maintain their health lifestyle

- Annual health checkup
- Medical consultation
- Mental health consultation
- Health consultation

Education and Student Life
https://www.hiroshima-u.ac.jp/en/explore_hu

Overseas Opportunities

Hiroshima University has concluded exchange agreements with educational research institutes around the world as an international education and research center on the world campus. Many students from all over the world gather at Hiroshima University and also the university dispatches many students from the land of Hiroshima to the world.

START Program

The purpose of this program is to provide opportunities for younger students with less previous experiences of traveling overseas to go abroad, visit our partner universities, and experience foreign cultures and environment.

Target: First Year Undergraduates
Program Period: Approx. 2 weeks during Summer and Spring (End of-Year) Vacations

Long-term Program

There is a program to study abroad as a exchange student and a program to obtain degree from a partner university while being enrolled at Hiroshima University.

AIMS-HU Program
Target: Undergraduate Students
Program Period: 4 months

"PEACE" Student Exchange Program
Target: Undergraduate and graduate students
Program Period: Approx 10 days–1year

HU's Study Abroad System
https://www.hiroshima-u.ac.jp/en/international/overseas_study

Contact

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website

Student Support Office