

For entrants in FY 2022

Attachment Form 1

Description of Major Program

Name of Faculty (Department) [School of Applied Biological Science (Department of Applied Biological Science)]

Name of Program	Applied Animal and Plant Science Program
1. Degree to be obtained: Bachelor of Agriculture	
<p>2. Overview</p> <p>The School of Applied Biological Science aims to educate students to acquire a wide range of knowledge and understanding in the realms of the natural and social sciences related to applied biology. Specifically, we provide education that allows students to acquire basic knowledge regarding food production, biotic resources, and biotechnology, gain experience in field science, understand bioethics and engineering ethics, and gain abilities in foreign languages, such as English, and in data processing.</p> <p>In the Applied Animal & Plant Science Program, the education is provided by faculties involved in areas represented by five keywords (animal production, plant production, production environment, biotic resources, and biological function) to students to acquire basic knowledge and skills regarding production and use of animals and plants in land and use and to be capable of widely considering situations of related areas and solving problems. In this Program, students study to develop understanding about topics such as physiology of animals and plants, environment for animal and plant production, development of new useful functionality of animals and plants, theory and technology for healthy and modern animal and plant production, the relationship among nature, human beings and animals and plants, and use of animal and plant resources. Students gain the knowledge and skills related to those areas in lectures and they also acquire intellectual and practical abilities via experience in the field and experiments using animal and plant. In addition to that, they broaden their international vision in the foreign book reading course. Furthermore, students improve their abilities comprehensively through the graduation research.</p> <p>This program aims to enable students to develop basic capabilities that can be used for the animal and plant production areas related to such as the sustainable production of animal and plant resources for foods with high quality and safety, and use of animal and plant resources for improving human life and to enhance the international vision related to such areas.</p> <p>This Program educates students to become experts who have acquired a higher level of expertise in the graduate school after this program or a research worker and a specialist with an international point of view in such as a public office for agriculture and fisheries or in business fields related to agriculture, foods, and chemical and pharmaceutical products.</p>	
<p>3. Diploma policy (policy for degree conferment and target to be achieved in the program)</p> <p>The Applied Animal & Plant Science Program aims to develop human resources who are capable of working as a researcher and specialist in the field related to the animal and plant production areas, related to such as the sustainable production of animal and plant resources for foods with high quality and safety and use of animal and plant resources for improving human life. Therefore, in this program, the degree of Bachelor of Agriculture will be awarded to students who acquire the capabilities described below, earn the required credits and to satisfy the specified achievement level, and pass the examination that is administered by the School of Applied Biological Science.</p>	

(3) The courses in the specialized education for this Program provide the "specialized subjects" related to animal and plant production to allow students to acquire the ability for systematically understanding animal and plant production. Furthermore, the courses of "exercise" and "experiment & practice" for the related area are provided for students to acquire skills and attitudes that can be practically applied and used. In addition to that, students develop general capabilities for problem solving including skills for communication, presentation, and practical foreign language capability while preparing his/her "graduation thesis."

5. Start time and acceptance conditions

The School of Applied Biological Science holds the entrance examination collectively for the Department of Applied Biological Science. Students mainly take the liberal arts curricula that are held for the whole of the university (seminar for developing intelligence, subject regarding peace, introduction to university education, foreign language study, data processing study, disciplinary subjects, and subject regarding health & sports) in the first and second semesters of the first year and the first semesters of the second year. Assignment of students to the Applied Animal and Plant Science Program is actually conducted in the second semester of the second year.

Students study the fundamental subjects for one year after entering the university to acquire the basic knowledge required for studying the expertise. Then they mainly study the specialized fundamental subjects common for the all students of School of Applied Biological Science in the second semester of the second year. Particularly, they take the subjects of Laboratory Work in General Chemistry, Laboratory Work in General Physics, and Laboratory Work in General Biology I & II (including computer exercise) as those regarding experiments that are common for all students of the School of Applied Biological Science that consist of to get basic training for experiments in a wide area that is commonly required for the students of the School of Applied Biological Science. Students acquire a wide range of intelligence, capability in foreign languages such as English, data processing skills, basic knowledge common for the students of the School of Applied Biological Science, understanding for bioethics and ethics of science by the first semester of the second year to allow themselves to understand the aim and characteristics of each major program and select the most appropriate program.

Students are allocated either of four major programs (Integrative Hydrospheric Science Program, Applied Animal & Plant Science Program, Food Science Program, and Molecular Agricultural Biology Program) based on his/her wish and achievement level in the second semester of the second year. Students who enter the university in the fiscal year are equally divided into four programs in principle. The digits after a decimal point are rounded up.

The student must meet the specified "requirements for allocation to the program" if he/she wishes to be allocated to the program.

6. Available qualification

- (1) Educational personnel certification: Type 1 License for High School Teacher (science)
 - (2) Curator License
 - (3) Appointment qualification for food sanitation supervisor and food sanitation inspector
- * For details of acquisition of those qualifications, refer to the "Students Handbook."
- (4) Qualification for examination for Class A hazardous materials engineer

7. Class subjects and their contents

* For the class subjects, refer to the subject table in Attachment 1.

* For the details of the class subjects, refer to the syllabus that is published for each academic year.

Achievement evaluation item level* 8 Academic achievement fhÖ o n a /

The evaluation criteria are specified for each academic achievement evaluation item, and the achievement level against the criteria is determined at the end of the semester.

The evaluation score for each evaluation item is converted to a numerical value (S = 4, A = 3, B = 2, and C = 1), and the evaluation standard for academic achievement, from when the student entered the university to the end of the semester, is determined using these values while applying weightings. The evaluation standards consist of three

levels, i.e. Excellent, Very Good, and Good.

Study achievement	Evaluation standard
Excellent	3.00 - 4.00
Very Good	2.00 - 2.99
Good	1.00 - 1.99

* Refer to the relationship between evaluation items and evaluation criteria described in Attachment 2.

* Refer to the relationship between evaluation items and class subjects described in Attachment 3.

* Refer to the curriculum map in Attachment 4.

Students are evaluated in the thesis examination.

(3) Timing and method for determining the supervisor

The supervisor is determined in the 2nd semester of the 3rd academic year.

The supervisor is determined under the guidance of the tutor. The tutor holds a guidance seminar for students to explain the specialties of each member of faculty. The tutor also instructs students to attend the presentation assembly for graduation theses and Masters theses in order to understand the details of research done by faculty members. Students visit a faculty member who he/she wants to choose as supervisor, and learn about the details of the graduation thesis and environment of the laboratory. Supervisors are designated after the tutor considers students' wishes and makes adjustments. Then the faculty committee of the program approves the designated supervisors.

10. Responsibility

(1) Responsibility for PDCA (plan, do, check, and act) cycle

The education affairs committee of school and the faculty members who provide the lectures are engaged in the processes of "plan" and "do"

The faculty committee of the program plans and executes the major program on their own responsibility. A chief faculty member is designated as the supervisor of the program.

The education affairs committee of the school exercises control over the major programs provided in the school.

The education affairs committee of the department consists of members who are elected for each program, a chairman who is chosen by the school, and another member.

The education reform promotion committee is engaged in the process of "check."

The education reform promotion committee consists of members who are elected in each program, a chairman who is chosen by the school, the chairman of the education affairs committee of the school, an assistant chief of the graduate course, and the other member(s).

The education reform promotion committee reviews and evaluates the major programs provided in each program, reports the results to the education affairs committee of the school and the programs, and provides advice and recommendations.

The faculty committee of the program that takes the responsibility for execution of the major program is engaged in the process of "act."

The faculty committee of the program and the education affairs committee of the school prepare and execute a plan for improvement taking the report, advice, and recommendations that are provided by the education reform promotion committee after the check process into consideration.

A tutor is designated for each program to provide direction regarding study and life.

A supervisor is designated in to each student in the program to provide guidance regarding the graduation thesis. The mentor guides the students through the process of the graduation research until they graduate.

The faculty committee of the program, the education affairs committee of the school, and the education reform promotion committee cooperate with each other to execute their roles with responsibility in the cycle of "plan", "do", "check", and "act" to improve the education provided at the school.

(2) Evaluation of program

Viewpoints for evaluation of program

The Applied Animal and Plant Science Program is evaluated from the viewpoints of "educational effectiveness" and "social effectiveness."

The "educational effectiveness" is evaluated by effects of the program execution on educational achievement in students.

The "social effectiveness" is evaluated by effects of the educational achievement in the program on the society.

Evaluation method

In this program, the achievement in the program is evaluated from the viewpoints described above for students in the second semester of the fourth year. For the "educational effectiveness", the results and achievement of the students who took the program are evaluated comprehensively by the group of faculty members who are engaged in the execution of the program. Also, the level of achievement of all the students is evaluated and reviewed. The "social effectiveness" is evaluated based on such things as the rate of employment in corporations that have a close connection with the contents of this program and the pass rate in public servant examinations. We regularly request a human resources staff member of a company that employs mainly students of this program to evaluate this program. In addition to that, we request graduates of this program to evaluate both their own achievement and that of the program. The staff in the company and graduates are requested to provide evaluation and advice regarding whether the class subjects and their contents in this program were effective for social activities, whether the contents of class appropriately corresponded to the changes in science, technology, and society, and any class subjects that would be required for the future.

Policy and method for feedback to students

The education reform promotion committee regularly conducts inquiries and interviews for students to review and evaluate the program, improve the contents of the program, and provide advice and recommendations for improvement.

Results of study in Applied Animal and Plant Science Program

Relation between evaluation items and evaluation criteria

Study achievement		Evaluation criteria			
Evaluation items		Excellent	Very Good	Good	
K n o w l e d g e & u n d e r s t a n d i n g	(1)	Ability for comprehensive and cross-disciplinary thinking and knowledge / understandings required to see a phenomena from a broad, top-down perspective and to take action for solving problems regarding the specialized area.	Has superior ability for comprehensive and cross-disciplinary thinking and capability to see a phenomenon from a broad, top-down perspective and to take action for solving problems regarding the specialized area.	Has sufficient ability for comprehensive and cross-disciplinary thinking and capability to see a phenomenon from a broad, top-down perspective and to take action for solving problems regarding the specialized area.	Has basic ability for comprehensive and cross-disciplinary thinking and capability to see a phenomenon from a broad, top-down perspective and to take action for solving problems regarding the specialized area.
	(2)	Basic knowledge and understanding required for acquiring expertise	Has fundamental knowledge and profound understanding required for acquiring expertise, and is capable of explaining this knowledge while associating it with items related to other areas.	Has fundamental knowledge and profound understanding required for acquiring expertise, and is capable of sufficiently explaining this knowledge while associating it with items related to other areas.	Has fundamental knowledge and profound understanding required for acquiring expertise, and is capable of providing basic explanation of this knowledge while associating it with items related to other areas.
	(3)	Knowledge and understanding regarding natural phenomena related to animal and plant production in levels of molecule, cell, and individual organism and production environment that supports the phenomena	Capable of providing detailed explanation regarding natural phenomena related to animal and plant production in levels of molecule, cell, and individual organism and production environment that supports the phenomena.	Capable of providing explanation regarding natural phenomena related to animal and plant production in levels of molecule, cell, and individual organism and production environment that supports the phenomena.	Capable of providing basic explanation regarding natural phenomena related to animal and plant production in levels of molecule, cell, and individual organism and production environment that supports the phenomena.
	(4)	Knowledge and understanding regarding the mechanism of animal and plant production in fields and relation between animals and the human society and natural environment.	Sufficiently understands the mechanism of animal and plant production in fields and relation between animals and the human society and natural environment.	Understands the mechanism of animal and plant production in fields and relation between animals and the human society and natural environment.	Substantially understands the mechanism of animal and plant production in fields and relation between animals and the human society and natural environment.
	(1)	Basic ability in communication, information processing, and physical activities required for acquiring expertise	Has superior ability in all the elements regarding communication, information processing, and physical activities required for acquiring expertise.	Has sufficient ability in all the elements regarding communication, information processing, and physical activities required for acquiring expertise.	Has basic ability in all the elements regarding communication, information processing, and physical activities required for acquiring expertise.

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(2)	Basic experimentation abilities and skills required for acquiring expertise	Has sufficient basic experimentation abilities and skills required for acquiring expertise, and is capable of autonomously applying them.	Has sufficient basic experimentation abilities and skills required for acquiring expertise, and is capable of autonomously applying them under instruction.	Generally has sufficient basic experimentation abilities and skills required for acquiring expertise, and is capable of supporting their execution.
(3)	Ability for basic biological analysis and evaluation regarding production function of animals and plants in levels of molecule, cell, and individual organism	Capable of autonomously conducting biological observation, basic physiologic, biochemical, and molecular biological analysis and evaluation. Capable of analyzing data with an appropriate method.	Capable of conducting biological observation, basic physiologic, biochemical, and molecular biological analysis and evaluation according to instruction.	Understands methods for biological observation, basic physiologic, biochemical, and molecular biological analysis and evaluation.
(4)	Basic techniques for handling and testing of animals and plants and those for breeding, cultivation, and management	Capable of appropriately cultivating and managing plants. Capable of autonomously breeding and managing resource and experiment animals for a long period of time. Has acquired skills for holding an animal and sampling.	Capable of cultivating and managing plants. Capable of breeding and managing resource and experiment animals according to instruction. Understands skills for holding an animal and sampling.	Capable of assisting in cultivating and managing plants. Capable of assisting breeding and managing resource and experiment animals.
(5)	Ability for basic evaluation of breeding environment in fields of animal and plant production	Capable of autonomously evaluating conditions for cultivating and managing plants, those for breeding and managing animals, and environment conditions such as breeding facilities and foods.	Capable of evaluating conditions for cultivating and managing plants, those for breeding and managing animals, and environment conditions such as breeding facilities and foods according to instruction.	Capable of measuring conditions for cultivating and managing plants, those for breeding and managing animals, and environment conditions such as breeding facilities and foods according to instruction.
(6)	Ability regarding scientific English that is required as a basis for understanding technical English manuals and international communication capabilities based on the acquired knowledge and approach method for the field	Has very advanced ability for reading English texts, is capable of understanding technical manuals and has acquired sufficient and profound capability for international communication.	Has advanced ability for reading English texts, is capable of understanding technical manuals to some extent, and has acquired sufficient and profound capability for international communication.	Has ability for reading English texts, is capable of partly understanding technical manuals, and has acquired sufficient and profound capability for international communication.

c a p s a b i v i l i t	(1)	Ability to identify issues that he/she should pursue for a specific phenomenon related to animal and plant production, organize his/her own opinion, logically publish them orally and/or in writing, and discuss the topic	Has advanced capabilities regarding elements of comprehensive ability and skills for such as identification of targeted issues, information processing, statistical analysis, and responsive communication.	Has capabilities regarding elements of comprehensive ability and skills for such as identification of targeted issues, information processing, statistical analysis, and responsive communication.	Has basic capabilities regarding elements of comprehensive ability and skills for such as identification of targeted issues, information processing, statistical analysis, and responsive communication.
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Role of liberal arts education in this program

The liberal arts education in this program aims to build both the language skills and the academic foundation required for the specialized education. It develops not only a capability for studying autonomously and a scientific intelligence based on the ability to collect, analyze and criticize data, but also language skills that allow the student to exchange ideas with others in English. Also, it enhances insight from a broad perspective for the essentials and the background of phenomena, and the linguistic ability and concern for peace which are required for a citizen of the world. It enables students to acquire the ability to integrate findings and establish a "knowledge system" that is really useful for problem solving, and to examine phenomena using a top-down perspective based on this integrated knowledge.

Specialized subjects	Laboratory and Field Works in Plant Production	1	Required	5th semester					10	1						30	1	30	1	30	1				100		
Specialized subjects	Laboratory and Field Works in Animal Production II	1	Required	5th semester					10	1								75	1	5	3			10	1	100	
Specialized subjects	Farm Practice	1	Required	5th semester							10	1						10	3	70	1			10	1	100	
Specialized subjects	Agricultural Plant Production and Biotechnology	2	Elective required	5th semester					80	1	20	1														100	
Specialized subjects	Animal Welfare	2	Elective required	5th semester	10	3					80	1												10	1	100	
Specialized subjects	Animal Physiology and Production	2	Elective required	5th semester					20	1	70	1												10	1	100	
Specialized subjects	Grassland and Feed Science	2	Elective required	5th semester					10	1	80	1												10	1	100	
Specialized subjects	Plant Molecular Biology	2	Elective required	5th semester					90	1	10	1														100	
Specialized subjects	Training for Animal Food Processing	1	Elective required	5th semester							80	1		20	1											100	
Specialized subjects	Seminar in Dairy Field Science	2	Elective required	5th semester							10	1						10	3	70	1			10	1	100	
Specialized subjects	Topics in Applied Animal and Plant Science I	1	Elective required	5th semester					20	1	80	1														100	
Specialized subjects	Food Hygiene	2	Elective required	6th semester	10	1	10	1	10	1	70	1														100	
Specialized subjects	Food Biochemistry	2	Elective required	6th semester					80	1	10	1												10	1	100	
Specialized subjects	Environmental Animal Physiology	2	Elective required	6th semester					10	1	80	1												10	1	100	
Specialized subjects	Topics in Applied Animal and Plant Science II	1	Elective required	6th semester					20	1	80	1														100	
Specialized subjects	Topics in Applied Animal and Plant Science III	1	Elective required	6th semester					20	1	80	1														100	
Specialized subjects	Graduate Thesis I -III	6	Required	6th-8th semester	10	3	5	3					5	3	5	3							10	3	65	10	100

Attachment 4

Curriculum map for Applied Animal and Plant Science Program

Study achievement Study achievement	1st year		2nd year		3rd year		4th year	
	1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester	7th semester	8th semester
Knowledge and understanding required to see a phenomenon from a broad, top-down perspective and for action based on comprehensive and cross-disciplinary thinking	Peace Science Courses ()	Research Front of Applied Biological Sciences ()			Animal Welfare	Graduate Thesis I ()	Graduate Thesis II ()	Graduate Thesis III ()
	Seminar for developing intelligence ()	Ethics of Science and Technology()		Introduction to Applied Animal and Plant Science		Public Health()		
	Introduction to University Education ()	Agricultural Production Resources()				Food Hygiene		
	Introduction to Applied Biological Science()	Seminar in Field Science()						
	Area Courses subjects ()							

Knowledge & understanding

Basic knowledge and understandings required for acquiring expertise	Basic Calculus / Elements of Calculus ()	Organic Chemistry ()	Statistics in Biology ()	Introduction to Applied Animal and Plant Science		Graduate Thesis I ()	Graduate Thesis II ()	Graduate Thesis III ()
	General Chemistry / Basic Concepts of Chemistry ()	Cell Science ()	Introduction to Physiology ()			Public Health()		
	Introduction to Applied Biological Science()	Species Biology ()						
	Introduction to Microbiology ()	Research Front of Applied Biological Sciences ()	Environmental Sciences for Bioproduction()			Food Hygiene		
		Ethics of Science and Technology()	Laboratory Work in General Biology I & II ()					
		Agricultural Production Resources()	Laboratory Work in General Chemistry ()					
		Physics for Applied Biological Science()	Laboratory Work in General Physics ()					
		Introduction to Molecular Biochemistry()						
	Seminar in Field Science ()							

Knowledge & understanding	Knowledge and understanding regarding natural phenomena related to animal and plant production in levels of molecule, cell, and individual organism and production environment that supports the phenomena	Introduction to Applied Biological Science()	Research Front of Applied Biological Sciences ()	Introduction to Physiology ()	Plant Nutritional Physiology	Reproductive Biology	Food Hygiene		
		Introduction to Microbiology ()	Physics for Applied Biological Science()	Environmental Sciences for Bioproduction()	Agricultural Soil Science	Production System in Livestock	Food Biochemistry		
			Introduction to Molecular Biochemistry()		Animal Breeding and Genetics	Laboratory and Field Works in Plant Production	Environmental Animal Physiology		
					Animal Nutrition	Laboratory and Field Works in Animal Production II	Topics in Applied Animal and Plant Science II		
					Animal Functional Anatomy	Agricultural Plant Production and Biotechnology	Topics in Applied Animal and Plant Science III		
					Introduction to Applied Animal and Plant Science	Animal Physiology and Production			
					Laboratory and Field Works in Applied Animal and Plant Science	Grassland and Feed Science			
						Plant Molecular Biology			
						Topics in Applied Animal and Plant Science I			

Knowledge and understanding regarding the mechanism of animal and plant production in fields and relation between animals and the human society and natural environment.	Introduction to Applied Biological Science()	Research Front of Applied Biological Sciences ()	Introduction to Physiology ()	Plant Nutritional Physiology	Reproductive Biology	Public Health()		
		Ethics of Science and Technology()	Environmental Sciences for Bioproduction()	Agricultural Soil Science	Production System in Livestock	Food Hygiene		
		Agricultural Production Resources()		Animal Breeding and Genetics	Farm Practice	Food Biochemistry		
		Seminar in Field Science ()		Animal Nutrition	Agricultural Plant Production and Biotechnology	Environmental Animal Physiology		
				Animal Functional Anatomy	Animal Welfare	Topics in Applied Animal and Plant Science II		
				Introduction to Applied Animal and Plant Science	Animal Physiology and Production	Topics in Applied Animal and Plant Science III		
					Grassland and Feed Science			
					Plant Molecular Biology			
					Topics in Applied Animal and Plant Science I			

Ability & skills	Basic communication, information processing, and physical activities	Foreign Languages () ()		Statistics in Biology ()		Seminar in Dairy Field Science	Graduate Thesis I ()	Graduate Thesis II ()	Graduate Thesis III ()
		Information and Data Science Courses ()							
		Health and Sports Courses ()							
	Basic experiment abilities and skills required for acquiring expertise				Laboratory and Field Works in Animal Production I	Training for Animal Food Processing	Graduate Thesis I ()	Graduate Thesis II ()	Graduate Thesis III ()
		"Basic Laboratory Work in Chemistry"							
			"Experimental Methods and Laboratory Work in Biology I"						
			Seminar in Field Science ()	Statistics in Biology ()					
				Laboratory Work in General Biology I & II ()					
				Laboratory Work in General Chemistry ()					
	Ability for basic biological analysis and evaluation regarding production function of animals and plants in levels of molecule, cell, and individual organism				Laboratory and Field Works in Applied Animal and Plant Science	Laboratory and Field Works in Plant Production			
					Laboratory and Field Works in Animal Production I				

Ability & skills	Basic techniques for handling and testing of animals and plants and those for breeding, cultivation, and management				Laboratory and Field Works in Applied Animal and Plant Science	Laboratory and Field Works in Plant Production			
						Laboratory and Field Works in Animal Production II			
						Farm Practice			
						Seminar in Dairy Field Science			
	Ability for basic evaluation of breeding environment in fields of animal and plant production				Laboratory and Field Works in Applied Animal and Plant Science	Laboratory and Field Works in Plant Production			
						Laboratory and Field Works in Animal Production II			
						Farm Practice			
						Seminar in Dairy Field Science			
	Ability regarding scientific English that is required as a basis for understanding technical English manuals and international communication capabilities based on the acquired knowledge and approach method for the field					Reading of Foreign Literature in Applied Animal and Plant Science	Graduate Thesis I ()	Graduate Thesis II ()	Graduate Thesis III ()

Comprehensive capability	Ability to identify issues that he/she should pursue for a specific phenomenon related to animal and plant production, organize his/her own opinion, logically publish them orally and/or in writing, and discuss the topic	Introduction to Applied Biological Science()	Research Front of Applied Biological Sciences ()	Laboratory Work in General Biology I & II ()	Plant Nutritional Physiology	Reproductive Biology	Graduate Thesis I ()	Graduate Thesis II ()	Graduate Thesis III ()
			Ethics of Science and Technology()	Laboratory Work in General Chemistry ()	Agricultural Soil Science	Production System in Livestock	Public Health()		
			Agricultural Production Resources()	Laboratory Work in General Physics ()	Animal Breeding and Genetics	Laboratory and Field Works in Animal Production II	Food Biochemistry		
			Seminar in Field Science ()		Animal Nutrition	Farm Practice	Environmental Animal Physiology		
					Animal Functional Anatomy	Animal Welfare			
					Introduction to Applied Animal and Plant Science	Animal Physiology and Production			
					Laboratory and Field Works in Animal Production I	Grassland and Feed Science			
						Seminar in Dairy Field Science			

(Example) Liberal arts subjects Specialized fundame Specialized subjects Graduation thesis () Required subjec () Elective require () Elective subjects

Attachment 5

List of Faculty Members of the Applied Animal and Plant Science Program

Name of faculty	Name of program and position	Extension number	Laboratory	Mail address
Naoki Isobe	Professor	7 9 9 3	B 3 0 9	niso@hiroshima-u.ac.jp
Taketo Obitsu	Professor	7 9 5 5	B 5 0 6	tobitsu@hiroshima-u.ac.jp
Toshihisa Sugino	Professor	7 9 5 6	B 5 0 4	sugino@hiroshima-u.ac.jp
Hajime Tanida	Professor	7 9 7 4	Farm	htanida@hiroshima-u.ac.jp
Masaoki Tudzuki	Professor	7 9 5 0	B 4 0 9	tsudzuki@hiroshima-u.ac.jp
Rumi Tominaga	Professor	7 9 6 6	B 1 1 2	rtomi@hiroshima-u.ac.jp
Takashi Bungo	Professor	7 9 5 7	B 5 0 7	bungo@hiroshima-u.ac.jp

Akihiro Ueff

Type	Subject type	Required No. of credits	Class subjects	No. of credits	Type of course registration	Year in which the subject is taken									
						1 st grade		2 nd grade		3 rd grade		4 th grade			
						Springs	Fall	Springs	Fall	Springs	Fall	Springs	Fall		
Liberal Arts Education	Peace Science Courses	2		2	Required										
	Basic Courses in University Education	Introductory Seminar for First-Year Students	2	Introductory Seminar for First-Year Students	2	Required									
		Introduction to University Education	2	Introduction to University Education	2	Required									
	Common Subjects	Basic English Usage	2	Communication Basic I	1	Required									
				Communication Basic II	1										
		Communication I	2	Communication I A	1	Required									
				Communication I B	1										
		Communication II	2	Communication II A	1	Required									
				Communication II B	1										
		Foreign Languages (Select one language)	4	Basic Foreign Language I	1	Elective Required									
				Basic Foreign Language II	1										
	Basic Foreign Language III			1											
	Basic Foreign Language IV			1											

Information and Data
Science

		Basic Concepts of Chemistry (Note7)											
		8 W YBW W M 9	1										
			1	Required									
	Total	44											

Note 1: The year indicated with a circle mark represents that in which students typically take the subject. The year with a double circle mark indicates the year in which students are highly recommended to take the subject. Students are allowed to take the subject in any year after that indicated with a circle or double circle mark. It is required to confirm the semester in which the subject is provided in the class schedule for liberal arts education subjects in the Students' Handbook because some subjects might be provided in different semester from that which is provided in this document.

Note 2: The credit for "Field Research in the English-speaking World" that is earned through such as a short-term study abroad and that for "Online English Seminar I," "Online English Seminar II," and "Online English Seminar III" that is earned through a self-study, are accepted as the credit for English required for graduation. Achievement in a foreign language skill test and language training might be accepted as a credit. For further information, refer to the description regarding English subjects in the liberal arts education and the item "Credit based on Achievement in Foreign Language Skill Test" in the Students Handbook.

(PP. 30 - 31, Liberal Arts)

Note 3: For the information and Data Science subject, it is required to take the subject " Introduction to Information and Data Sciences " that is provided in the first semester in the first year. Only when failing to earn the credit for " Introduction to Information and Data Sciences " , is it allowed to take the subject " Elements of Information Literacy " that is provided in the second semester in the first year.

Note 4: It is required to earn 4 credits or more for the natural science subjects and 4 credits or more for the human & social science subjects.

However, "Fundamentals of Biology" of the natural science subjects is a subject for which students are requested to take if he/she did not take biology subjects in the entrance exam (including the University Testing Center Examination).

For the other students, the credit for the subject "Fundamentals of Biology" is not accepted as that for graduation.

It is allowed to include up to 4 credits for society-related subjects as credits for the Human & Social Science Subjects.

Note 5: For health & sports subjects, it is recommended to take a practicum in sports.

Note 6: Students who studied Mathematics III in high school are required to take the subject "Basic Calculus." Students who did not study Mathematics III in high school are required to take the subject "Elements of Calculus."

Note 7: Students who did not take chemistry subjects in the entrance exam (including the University Testing Center Examination) are required to take the subject "Basic Concepts of Chemistry." For those students, the credit for the subject "General Chemistry" is not accepted for graduation.

For students who take chemistry subjects, the credit for the subject "Basic Concepts of Chemistry" is not

accepted for graduation.

Note 8: It is required to take 8 W YBW W M 9 W
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Table of Registration Standards (Specialized Fundamental Subjects)

Integrative Hydrospheric Science Program Applied Animal and Plant Science Program Food

Science Program Molecular Agro-Life Science Program

Type	Subject type	Required No. of credits	Class subjects	No. of credits	Year in which the subject is taken														
					1 st grade		2 nd grade		3 rd grade		4 th grade								
					Springs	Fall	Springs	Fall	Springs	Fall	Springs	Fall							
Specialized Subjects	Specialized Fundamental Subjects	24	Introduction to Applied Biological Sciences	2															
			Introduction to Microbiology	2															
			Introduction to Molecular Biochemistry	2															
			Agricultural Production Resources	2															
			Physics for Applied Biological Science	2															
			Ethics of Science and Technology	2															
			Statistics in Biology	2															
			Environmental Sciences for Bioproduction	2															
			Laboratory Work in General Biology I	1															
			Laboratory Work in General Biology II	1															
			Laboratory Work in General Chemistry	1															
			Laboratory Work in General Physics	1															
			Required Subjects: Total 20 credits																

		Seminar in Field Science	2							
		Research Front of Applied Biological Sciences	2							
		Introduction to Physiology	2							
		Public Health	2							
		Elective Required Subjects Take 4 credits from above subjects (Redundant credits over 4 credits move to Elective Subjects in each Program)								

		Environmental Animal Physiology Topics in Applied Animal and Plant Science II Topics in Applied Animal and Plant Science III						
		Elective Required Subjects: Take 14 credits from above subjects (Redundant credits over 14 credits move to Elective Subjects)						
		Elective Subjects: At least 13 credits must be obtained. Specialized subjects from other Applied Biological Science programs can be included in the elective subjects. Up to 10 credits obtained from specialized subjects at another School and from subjects offered by the AIMS Program completed at the dispatch destination can be included in the credits required for graduation. Credits obtained from Liberal Arts Education Subjects and subjects related to the teaching progression (?program?) cannot be included in the credits required for graduation.						
		124						

[Credits required for graduation] 124 credits (44 credits for liberal arts education subjects + 24 credits for specialized fundamental subjects + 56 credits for specialized subjects)