For entrants in FY 2023

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 Biological Science Program |
|--------------------------|------------------------------------|
| 1. Degree to be obtained | ed: Bachelor of Agriculture |

2. Overview

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.

In the Applied Biological Science Program, students begin by studying liberal arts subjects provided in English for the whole university, together with English and other foreign languages, in order not only to establish a foundation for their academic studies at the School of Applied Biological Sciences, but also to enable them to acquire the language skills required for working in international fields. In addition to this, specialized fundamental subjects that constitute introductory courses for applied biological science, and experimentation and practice courses, including overseas exercises, are provided together with the liberal arts subjects. Students commence their studies in a wide range of academic areas at the School of Applied Biological Science during the second semester of the second academic year. Specifically, they take lectures in specialized subjects, and experimentation and practice courses in integrated hydrosphere science, applied animal and plant science, food science, and molecular agricultural and life science under a tailor-made curriculum (specialized subjects packaged together for each area) for each specialized area that the student selects. This is so that students are enabled to achieve wide-ranging scholarship and the various skills required in areas of applied biological science. In addition to this, students join specialized classes for exchange students and attend lectures, exercises, and task-based research provided at an overseas partner university (packaged subjects provided in overseas partner universities) in order to acquire the abilities required to work overseas. In the second semester of the second year, while engaging in ongoing discussion with their tutor, students undertake graduate research in a particular area of specialization and go on to identify and solve problems while fostering their ability to present their results in English.

This program educates students to become experts who go on to acquire a higher level of expertise in the graduate school after this program, or who become researchers and a specialists who are able to work in international fields with an international perspective in such institutions as public organizations for agriculture and fisheries, or in fields of business related to agriculture, foods, and chemical-pharmaceutical products.

3. Diploma policy (policy for degree conferment and target to be achieved in the program)

In the Applied Biological Science Program, students are required to take subject classes provided in English or Japanese for the core areas of 4 major programs (integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science) (hereinafter referred to as "the 4 core areas") to acquire expertise and specialized skills in wide range of academic areas. This program provides students with education enabling them to exercise their thinking abilities and creativity as future scientists in companies, universities, and the other public organizations. 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.

- Through liberal arts education subjects:
 - The ability to study autonomously; the ability to collect, analyze, and criticize data; and putting these abilities into practice;
 - (2) Insight, from a broad perspective, into the essentials and the background of phenomena, and the linguistic ability and concern about peace which are required for a citizen of the world;
 - (3) The ability to identify a problem based on broad knowledge, integrate findings to establish a "knowledge system" that is really useful for problem solving, and examine phenomena from a top-down perspective based on this integrated knowledge; and
 - (4) General and basic knowledge of science that enables the student to develop the knowledge and skills required for application in any of the specialty fields of applied biological science.

• Through the specialized fundamental subjects for specialized education, the student is required to acquire:

- (5) The ability to understand cutting-edge topics, as well as the basic ideas related to organisms and the biosphere;
- (6) The ability to understand the value orientation and relevance to a globalized society of applied biology, and the importance of communication and consensus building in relation to the application of scientific results; and
- (7) Understanding of problems regarding research misconduct and the importance of research and engineering ethics.
- Through the specialized education in this program, the student is required to acquire:
 - (8) The ability to systematically and hierarchically understand expertise relating to the 4 core areas;
 - (9) Data collection and analysis capabilities, and systematic skills for research in the academic fields belonging to an academic realm that has as its core one of the four core areas, as well as the ability to make practical use and application of those skills; and
 - (10) The ability to apply knowledge, skills, and attitudes such as he/she has obtained in an integrated manner in order to solve problems that he/she identifies, as well as to logically present

his/her conclusions, orally or in writing, and discuss them with the other persons in academic fields related to an academic area that has as its core one of the four core areas.

4. Curriculum policy (policy for arranging and executing the educational courses)

To enable students to achieve the targets that are defined for the Applied Biological Science Program, the educational courses are organized and executed according to the following policies:

(1) Courses in the liberal arts education aim to develop a wide-ranging and in-depth education and general intelligence, and to foster in students a depth of humanity and desire for peace. They also aim to develop practical foreign language abilities, an international perspective, the ability to understand different cultures, and the ability to ut for each student.

5. Start time and acceptance conditions

The School of Applied Biological Science holds the entrance examination collectively for the Department of Applied Biological Science. For the Applied Biological Science Program, students' wishes in terms of allocation are considered at an early stage in the 1st semester of the 1st academic year. Then selection of students is conducted based on their grades (principally for English) when the student entered the university, as well as the score of an external test of English language ability. From the first semester of the first academic year onward, students take special liberal arts subjects that mainly consist of subjects provided in English that are directed towards studying abroad for a short time (seminar for developing intelligence, Peace Science Courses, Introduction to University Education, Information Courses, disciplinary subjects, and subjects regarding health & sports). They take specialized fundamental subjects along with liberal arts subjects in order to acquire the basic knowledge that is common to the various academic areas studied in the School of Applied Biological Science. From the second semester of the second academic year onward, students take subjects provided in English in order to study specialized areas studied at the School of Applied Biological Science, crossing the borders between them. In addition to this, they study under a curriculum that is tailor-made for each student by combining specialized subjects provided for the four core areas with lectures, exercises, and task-based research at the overseas partner university.

6. 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.

7. Academic achievement

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 |

| Achievement evaluation | Numerical |
|------------------------|------------|
| | conversion |
| S (Excellent: 90 or | 4 |
| more points) | |
| A (Very good: 80 - 89 | 3 |
| points) | |
| B (Good: 70 - 79 | 2 |
| points) | |
| C (Passed: 60 - 69 | 1 |
| points) | |

5 HIHU WR WKH UHODWLRQVKLS EHWZHHQWHLYRDOO XFDWWWRHOULDW (BHVF \$WWDFKPHQW

5 HIHU WR WKH UHODWLRQVKLS EHWZHHWQXHEYMDHOFXMDWOGRWQFLUMLEIPIKG DQ

5 HIHU WR WKH FXUULFXOXP PDS LQ \$WWDFKPHQW

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7 KH JUDGXDWLRQ UHVHDUFK LQ WKLV SURWIBIDDOODBDOWKHOHWHW7KGHHWQW KLPVHOIKHUVHOIWR FXWWLQJHGJH UHVDHODOULFJHOLQ ROJGHUWWRDO(VG/WOH DQGWKHLUEDFNJURXQGLQWKHILHOGRIDD/SZSHOOLEIGDVELWRRDBFITKDDOH/FR FDSDELOLWLHV ZKLOH DQDO\]LQJ DQG FRWAWLDGGUGLSQUHWWKHQVRLEQWDWGKH (QJOLVK ERWK RUDOO\ DQG LQ ZULWLQJ

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6 W X G H Q W V F R Q G X F W W K H J U D G X D W H U H V H D U F V K X S B C Y I U V R UK H 7 K ULRG JUDGXDWLRQUHVHDUFK VWXGHQWVHQJDJRHIZKLOWGKHW/KWHDSOUGRLFOHJVW/KFH FRPSUHKHQVLRQ DELOLW\ DQG LQWHOOLJELQHFHV LDGQHDQOWVLLLVFDDWELE DQG SUHVHQWDWLRQ RIWKH URHOV XDOE WOVL VSUR SIRVGDOE \DOE RGLBU LQVLJKW DFTXLUH WKH FDSDELOLW\DQG VNLOOV UNHVTHXUUWHKGHWUR JZURDUGNXDW/LHRIS 6 W X G H Q W V O H D U Q W K H E D V L F F R Q F H S W V H D Q G U DH VG W R W X L C H V H X D Q U F D P D A HVW DEOLVK D SODQ IRU WKHLU UHVHDUFDKUFVKWDXGCG G FHHSVHKURLGPVHDRWU/VWDV WKH UHVHDUFK XQGHU WKH LQVWUXFWLRQRRUHWK/HWLXUGWHXQSWHXU10/LHW/HLUHZ) REWDLQHGLQWKHUHVHDUFKDQGGHILQHHDWJBKJKIWXGRQWWKHIISXHUWLKH RIUHVHDUFK SURFHVVHV LQ RUGHU WR KDYMBUWFKKHDFFWDLCYFLWVWHR/FDEWVH HGJH 7KH\SUHSDUH DJUDGXDWLRQ WKMWWLD/OEGDWHGFRLOWWLKWHEVHWRKUGH)U GDWH 6WXGHQWV DUH HYDOXDWHG LQ WKH WKHVLV H[DPLQDWLRQ

7LPLQJ DQG PHWKRG IRU GHWHUPLQLQJ WKH VXSHUYLVRU

7KH VXSHUYLVRU LV GHWHUPLQHG LQ WKBIGBQRGLF/H, PIBUWHU RI WKH 7 KH VXSHUYLVRU LV GHWHUPLQHG XQGH7UKHWW/HXW/RLUGKORQOFOEVRDW/KLHGW IRU VWXGHQWV WR H [SODLQ WKH VSH FLDWO, WZKHW WXKHWDRFUKDPOHMPREHOD| VRWUI

WR DWWHQG WKH SUHVHQWDWLRQ DVVHPDE/OWNHBIVI WWKDHG/WHD/WLLQRBQW/GKHHUV WKH GHWDLOV RIUHVHDUFK GRQH E\IDFXDDWD;PPX+DPWE/HDMP16M/UX OZIKLBE/WK/H

WR FKRRVH DV VXSHUYLVRU DQG OHDUQ GDXEDRWWWRWQKMKGHWWDDDOQVGRHQM

WKH ODERUDWRU\ 6XSHUYLVRUV DUH GHVLGHQUDWVHYOYXDGHAVQHWVWHZHLWKXHV DGMXVWPHQWV 7KHQWKHIDFXOW\FRPPLWWWHHGRWWWQBWSBHGJWXDSPHD

9. 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 Fisheries Biology 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 UHVXOWV DQG DFKLHYHPHQW RIWKH VW XHGHHYDDWOX 20 KWRH 62 WFR RP SWUKHK IS 62 A JURXS RIIDFXOW VPHPEHUV ZKR DUH HQJDHJHSGJR. QU 12 WFKH \$169 [WHFF X WKR Q DFKLHYHPHQW RIDOO WKH VWXGHQWV LVVHR YED D&DHWIHHGF 120 QOYGHQHHYDVHZ A EDVHG RQ VXFK WKLQJV DV WKH UDWH RIWHKPDSWOR (190 YHQ 120 QOYGHQHHYDVHZ RQ Q WKH FRQWHQWV RIWKLV SURJUDP DQG WWKH [SDEV 120 DWD 120 HARQVQ :SHXELE 12 K OM D KXPDQ UHVRXUFHV VWDIIPHPEHU RID F/RWPXSCHQQ WWK BWWHKPLSVOSRUR JPUDD WKLV SURJUDP ,Q DGGLWLRQ WR WKDW ZSHIRUJHUTXH WWR JHUDG SX DOWH WHVER DFKLHYHPHQW DQG WKDW RIWKH SURJUQ 66 J70 KOHG 3X 120 120 WHKH HTTRAFFS/D HYDOXDWLRQ DQG DGYLFH UHJDUGLQJ Z KWHKWHKHUUFWR 120 120 WH KH FR HIIHFWLYH IRU VRFLDO DFWLYLWLHV ZKHDWSKE WUKD 120 120 WH RQ 100 WH

3ROLF\DQGPHWKRGIRUIHHGEDFNWRVWXGHQWV 7KHHGXFDWLRQUHIRUPSURPRWLRQFRFFKLWWWHWHDUQHGJXQDWHOUYERQ%G WRUHYLHZDQGHYDOXDWHWKHSURJUDPSIUFRSJWIRDYPHDWOKGHSFURRQWUHGOHWI UHFRPPHQGDWLRQVIRULPSURYHPHQW

Table of Registration Standards (Liberal Arts Education Subjects)

(Applied Biological Science Program)

| | | | | | | | | | | | Year | in wh | ich th | e subj | ect is | taken | | |
|------------------------|------------------|------------------------------|---|---|--------------------------------|-----------------------------|--|-------------------|------------------------|--------------------|------|-------------------|--------|-------------------|--------|-------------------|------|--|
| | | | | | | Required | | | Type of | 1 st gi | rade | 2 nd g | rade | 3 rd g | rade | 4 th g | rade | |
| Туре | | S | ubje | ct ty | pe | No. of Class subjects | | No. of credits | course registration | Springs | Fall | Springs | Fall | Springs | Fall | Springs | Fall | |
| | Pe | Introductory Semina | | | | 2 | (Note2) | 2 | Required | 0 | | | | | | | | |
| | s in | | for | Fire | ry Seminar st-Year lents | 2 | 2 Introductory Seminar for First-Year Students 2 Required (| | 0 | | | | | | | | | |
| | Basic Courses in | U | | | ection to Education | 2 | Introduction to University Education (Note2) | 2 | Required | 0 | | | | | | | | |
| | | | | | opment ninar | 0 | (Note3) | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | | | | Basic | | Communication Basic I | 1 | | \bigcirc | | | | | | | | |
| | | | | | English Usage | 2 | Communication Basic II | 1 | Required | | 0 | | | | | | | |
| | | | | Communic 2 Communication I A 1 Image: Graph of the state of the | | Communic | 2 | Communication I A | 1 | 1 Required | 0 | | | | | | | |
| | | | Í | | \odot | | | | | | | | | | | | | |
| | | | | sh(N | Communic | 2 | Communication II A | 1 | Required | | 0 | | | | | | | |
| | | | | Engli | ation II | | Communication II B | 1 | _ | | 0 | | | | | | | |
| ation | | 20 BILLO | 2 n n S n n S n n S n n S | ш | | 1 | Field Research in the English-speaking World | 1-4 | Elective Required | 0 | 0 | 0 | 0 | | | | | |
| ts Educ | | on I an | | | | 1 | Advanced English for Communication | 1 | Elective Required | 0 | | | | | | | | |
| Liberal Arts Education | Subjects | Ibjects Foreign Languages | | English | | Basic Foreign Language I | 1 | | 0 | | | | | | | | | |
| Π | Common S | | La (S | elect | lages t one guage) | 4 | | | Elective Required | | | | | | | | | |

| | | "Experimental Methods and Laboratory Work in Chemistry I" (Note4) | | | | | | |
|-------|----|--|---|----------|---|--|--|--|
| | | "Experimental Methods and Laboratory Work in Biology I" | 1 | Required | 0 | | | |
| Total | 40 | | | | | | | |

- 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: It is required to first take subjects that are provided in English.
- Note 3: It is required to take more than 4 subjects from the fields of Arts and Humanities/Social Sciences and more than 4 subjects from Natural Sciences.
- Note 4: It is required to take : D O year. Only when failing to earn the credit for : D O "Experimental Methods and Laboratory Work in Chemistry I" that is provided in the second semester in the first year.
- Note 5: 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)

Table of Registration Standards (Specialized Fundamental Subjects)

| | | | | | | Ye | ar in w | hich th | e subje | ct is tal | ken | |
|----------------------|----------------------------------|-------------------|--|-------------------|------------|------|-------------------|---------|-----------------------|-----------|-----------------------|------|
| | | Required | | | 1st g | rade | 2 nd g | rade | 3 rd grade | | 4 th grade | |
| Туре | Subject type | No. of credits | Class subjects | No. of credits | Springs | Fall | Springs | Fall | Springs | Fall | Springs | Fall |
| | | | Introduction to Applied | 2 | \bigcirc | | | | | | | |
| | | | Biological Science I | | | | | | | | | |
| | | | Introduction to | 2 | \bigcirc | | | | | | | |
| | | | Microbiology | | | | | | | | | |
| | | | Introduction to Molecular | 2 | | 0 | | | | | | |
| | | | Biochemistry | | | | | | | | | |
| | ß | | Agricultural Production | 2 | | 0 | | | | | | |
| | Specialized Fundamental Subjects | | Resources | | | | | | | | | |
| ĘS | | | Physics for Applied | 2 | | 0 | | | | | | |
| Specialized Subjects | | | Biological Science | | | | | | | | | |
| Sub | ent | | Ethics of Science and | 2 | | 0 | | | | | | |
| zed | ndan | 24 | Technology | - | | | 0 | | | | | |
| aliz | Fu | | Statistics in Biology | 2 | | | 0 | | | | | |
|)eci | zed | | Environmental Sciences | 2 | | | 0 | | | | | |
| Sp | iali | | for Bioproduction | 1 | | | \sim | | | | | |
| | pec | | Laboratory Work in | 1 | | | 0 | | | | | |
| | S | | General Biology I | 1 | | | 0 | | | | | |
| | | | Laboratory Work in General Biology II | 1 | | | 0 | | | | | |
| | | | Laboratory Work in | 1 | | | \bigcirc | | | | | |
| | | | General Chemistry | 1 | | | | | | | | |
| | | | Laboratory Work in | 1 | | | 0 | | | | | |
| | | | General Physics | 1 | | |) | | | | | |
| | | | - | red Subj | ects: | Tota | al 20 (| credit | ts | | | |

(Applied Biological Science Program)

| Introduction to Applied | 2 | | \bigcirc | | | | | | | | |
|--|------------|---------|------------|---------|------|--|------------|--|--|--|--|
| Biological Science II | - | | \bigcirc | | | | | | | | |
| Seminar in Field Science | 2 | | \bigcirc | | | | | | | | |
| Research Front of | 2 | | 0 | | | | | | | | |
| | Z | | 0 | | | | | | | | |
| Bioresource Sciences | | | | | | | | | | | |
| Research Front of Food | 2 | | 0 | | | | | | | | |
| and AgriLife Science | | | | | | | | | | | |
| Overseas Exercise of | 2 | | | 0 | | | | | | | |
| Applied Biological | | | | | | | | | | | |
| Science I | | | | | | | | | | | |
| Overseas Exercise of | 1~2 | | | 0 | | | | | | | |
| Applied Biological | | | | | | | | | | | |
| Science II | | | | | | | | | | | |
| Introduction to | 2 | | | 0 | | | | | | | |
| Physiology | | | | | | | | | | | |
| Public Health | 2 | | | | | | \bigcirc | | | | |
| | Elective | Requi | red Su | ibjects | | | | | | | |
| Ta | ke 6 credi | ts from | n abov | ve subj | ects | | | | | | |
| (Redundant credits over 6 credits move to Elective Subjects in Applied | | | | | | | | | | | |
| | Biologica | 1 Scier | nce Pr | ogram |) | | | | | | |

Table of Registration Standards(Specialized Subjects)

| | | | | | | | Yea | r in wl | hich th | ie subj | ect is ta | aken | | | | |
|----------------------|----------------------|-------------------|---|---|----------------|---------|-------------------------------------|---------|---------|------------|-----------|---------|------|--|--|--|
| | | Required | | | | 1st g | rade | | | 1st g | ŗade | | | | | |
| Туре | Subject type | No. of credits | | Class subjects | No. of credits | Springs | Fall | Springs | Fall | Springs | Fall | Springs | Fall | | | |
| | | | Specia | alized subjects packaged for each area | 10 | | | | 0 | \bigcirc | 0 | 0 | 0 | | | |
| | | | (Note | | | | | | | | | | | | | |
| | | | | ate Thesis I | 2 | | | | | 0 | | | | | | |
| | | | | ate Thesis II ate Thesis III | 2 2 | | | | | | 0 | | | | | |
| | | | | ate Thesis IV | 2 | | | | | | | 0 | 0 | | | |
| | | | Grade | | 1 | l i1 | l 8crea | lits | | | | | 0 | | | |
| | | | | Global Environmental Issues and Managements | 3 | | | | 0 | | | | | | | |
| | | | e2) | Modern Food Science | 3 | | | | 0 | | | | | | | |
| cts | cts | | | Fish Production | 3 | | | | 0 | | | | | | | |
| Specialized Subjects | Specialized Subjects | 56 | Specialized English subject group (Note2) | Plankton Biology | 3 | | | | 0 | | | | | | | |
| alize | alize | 30 | t gro | Animal Science and Technology | 3 | | | | 0 | | | | | | | |
| Speci | Speci | | ubject | subject | subject | subject | Physiology of Field Crop Production | 3 | | | | 0 | | | | |
| | | | nglish s | Introduction Physiology of Domestic Animals | 3 | | | | 0 | | | | | | | |
| | | | lized E | Molecular-level Understanding of Functionality of Foods | 3 | | | | 0 | | | | | | | |
| | | | Specia | Resource Management | 3 | | | | 0 | | | | | | | |
| | | | | Molecular Agro-life Science Packaged subjects provided in overseas partner university (Note3) | 1~3 | | | | 0 | | | | | | | |
| | | | | redits | | | | | | | | | | | | |
| | | | | Elective Required S | - | 1 | | | | | | | | | | |
| | | | Elective Subjects l i 10credits(Note4~8) | | | | | | | | | | | | | |

(Applied Biological Science Program)

| | | (Note 1) "Specialized subjects packaged for each area" are composed as a subject group that consists of subjects selected from core disciplines for each of the 4 major programs (Integrated Hydrosphere Science, Applied Animal & Plant Sciences, Food Science, and Molecular Agricultural and Life Science) according to the study plan prepared by the mentor. Subject groups consist of different subjects for each student. (Note 2) For "Specialized English subject group," it is required to take 3 unit subjects that include the exercise class for foreign students in AIMS program and earn 18 credits for 6 subjects or more. Note that the classes of the subject are provided from the last 10 days of September to the end of December. (Note 3) For the "Packaged subjects provided in overseas partner university," students are required to select a specific subject by themselves to earn the credit in the destination university. (Note 4) Any credit for a specialized subject for the four other major programs is accepted as a credit for elective subject. |
|-------|-----|---|
| | | |
| | | end of December. |
| | | (Note 3) For the "Packaged subjects provided in overseas partner university," students are required |
| | | to select a specific subject by themselves to earn the credit in the destination university. |
| | | |
| | | (Note 5) Any credit for an elective required subject among specialized fundamental subjects is accepted as a credit for elective subject. |
| | | (Note 6) Any credit for a subject in the specialized English subjects group that is earned beyond |
| | | the requirement of 30 credits is accepted as a credit for elective subject. |
| | | (Note 7) Any credit for a specialized subject for other schools is accepted as a credit for elective |
| | | subject. |
| | | (Note 8) It is not allowed to include liberal arts subjects and subjects in the teacher training courses. |
| Total | 124 | |

[Credits required for graduation] 124 credits (40 credits for liberal arts education subjects + 26 credits for specialized fundamental subjects + 58 credits for specialized subjects)

Results of study in Applied Biological Science Program

Relation between evaluation items and evaluation criteria

| | Excellent | Very Good | Good |
|--|---|---|--|
| 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 e 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 v 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 applied biological sciences | Has fundamental knowledge of areas regarding integrated hydrosphere science, applied animal & plant2(n)-&e)-4()-4(ap)-4(p)-6i) 3 B1T 2 w (B 4 2 | : | |

| A b i | (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. |
|--|-----|---|---|--|---|
| l i t | (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. |
| e s & s | (3) | Intellectual abilities and skills for research areas related to applied biological sciences | Has sufficient intellectual abilities and skills for areas related to integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science that are related to applied biological science, and is capable of exercising them. | Has intellectual abilities and skills for areas related to integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science that are related to applied biological science, and is capable of exercising them. | Has sufficient intellectual abilities and skills for areas related to integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science that are related to applied biological science. |
| k i l s | (4) | Scientific English ability required for reading specialized treatises and providing presentations in English | Capable of exercising ample English language skills, fully understanding specialized treatises, organizing study results in English with excellent writing ability, and fully presenting the results in English. | Capable of exercising fundamental English language skills, understanding the whole story of specialized treatises, organizing study results in English with fundamental writing ability, and presenting the results in English. | Capable of exercising basic English language skills, understanding the main point of specialized treatises to some extent, organizing study results in English with basic writing ability, and presenting the results in English. |
| C c m a p p r a r | (1) | Ability to collect information related to peripheral disciplines to complement the knowledge regarding the specialized area, and to consider issues regarding applied biological science from diverse points of view | Capable of collecting information related to peripheral disciplines to complement the knowledge related to the specialized area to consider issues in areas of integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science that are related to applied biological science from diverse points of view, explain the issues to other persons, and apply the results of consideration for any specific purpose. | science, applied animal & plant science, food science, and molecular agricultural and life science that are related to applied biological | Capable of collecting information related to peripheral disciplines to complement the knowledge regarding the specialized area to consider issues from diverse points of view in areas of integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science that are related to applied biological science. |
| b e i h i e i n t s t i y v e | (2) | Ability to organize own ideas, demonstrate an apprehension of those ideas, logically represent own conclusion orally or in writing, and exchange ideas in English regarding areas of applied biological sciences in which themes in integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science are discussed from diverse points of view. | Capable of organizing own ideas, demonstrating an apprehension based on those ideas, logically representing own conclusion in English, and exchanging ideas in English on a higher level regarding areas of applied biological sciences in which themes in integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science are discussed from diverse points of view. | Capable of organizing own ideas, demonstrating an apprehension based on those ideas, logically representing own conclusion in English, and sufficiently exchanging ideas in English regarding areas of applied biological sciences in which themes in integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science are discussed from diverse points of view. | Capable of organizing own ideas, demonstrating an apprehension based on those ideas, logically representing own conclusion in English, and exchanging ideas in English regarding areas of applied biological sciences in which themes in integrated hydrosphere science, applied animal & plant science, food science, and molecular agricultural and life science are discussed from diverse points of view. |

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 critizen 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.

Attachment 3

Relation between evaluation items and class subjectsRelation between evaluation items and class subjectsRelation between evaluation items and class subjects

| | | | | | Evalu | ation i | tem | | | | | | | | | | | | | | |] |
|---------------------------------------|---|-------------------|------------------------------------|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | D | Someotor when | Know | ledge | & und | erstand | ling | | Abilit | y & sk | tills | | | | | Comp capab | orehens ility | sive | | Total of weightings |
| Subject | Name of class | Number of credits | Required or | Semester when the class is | (1) | | (2) | | (3) | | (1) | | (2) | | (3) | (4) | | (1) | | (2) | | for |
| category | subject | | Electivee | provided | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | Weighti ng for evaluati on item for the subject | Weighti ng for evaluati on item | evaluation items for the subject |
| Liberal arts education subjects | Peace Science Courses | 2 | Required | 1st semester | 100 | 1 | | | | | | | | | | | | | | | | 100 |
| Liberal arts education subjects | Introductory Seminar for First-Year Students | | Required | 1st semester | 100 | 1 | | | | | | | | | | | | | | | | 100 |
| Liberal arts education subjects | Introduction to University Education | 2 | Required | 1st semester | 100 | 1 | | | | | | | | | | | | | | | | 100 |
| Liberal arts education subjects | Development Seminar | 0 | | 1st - 6th semesters | 50 | 1 | | | | | | | | | | 50 | 1 | | | | | 100 |
| Liberal arts education subjects | Foreign Languages | 11 | Required / Elective required | 1st - 4th semesters | | | | | | | 60 | 1 | | | | 40 | 1 | | | | | 100 |
| Liberal arts education subjects | Information and Data Science Courses | 4 | Required | 1st - 2nd semesters | | | | | | | 100 | 1 | | | | | | | | | | 100 |
| Liberal arts education subjects | Area Courses | 11 | Elective required | 1st - 6th semesters | 100 | 1 | | | | | | | | | | | | | | | | 100 |
| Liberal arts education subjects | Social Cooperation Courses | 0 | | 1st - 6th semesters | 100 | 1 | | | | | | | | | | | | | | | | 100 |
| Liberal arts education subjects | Health and Sports Courses | 2 | Elective required | 1st - 2nd semesters | | | | | | | 100 | 1 | | | | | | | | | | 100 |
| Liberal arts education subjects | Organic Chemistry | 2 | Required | 2nd semester | | | 100 | 1 | | | | | | | | | | | | | | 100 |
| Liberal arts education subjects | Cell Science | 2 | Required | 2nd semester | | | 100 | 1 | | | | | | | | | | | | | | 100 |
| Liberal arts education subjects | Basic Laboratory Work in Chemistry | 1 | Required | 1st semesters | | | | | | | | | 100 | 1 | | | | | | | | 100 |
| Liberal arts education subjects | "Experimental Methods and Laboratory Work in Biology I" | | Required | 2nd semesters | | | | | | | | | 100 | 1 | | | | | | | | 100 |
| Specialized subjects | Introduction to Applied Biological Science I | 2 | Required | 1st semester | | | 100 | 1 | | | | | | | | | | | | | | 100 |

| Specialized subjects | Introduction to Microbiology | 2 | Required | 1st semester | | | 100 | 1 | | | | | | | | | | | | 100 |
|-------------------------|--|---|----------------------|---------------|----|---|-----|---|-----|---|--|-----|---|--|----|---|----|---|--|-----|
| Specialized subjects | Introduction to Molecular Biochemistry | 2 | Required | 2nd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Agricultural Production Resources | 2 | Required | 2nd semester\ | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Physics for Applied Biological Science | 2 | Required | 2nd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Ethics of Science and Technology | 2 | Required | 2nd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Statistics in Biology | 2 | Required | 3rd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Environmental Sciences for Bioproduction | 2 | Required | 3rd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Laboratory Work in General Biology I | 1 | Required | 3rd semester | | | | | | | | 100 | 1 | | | | | | | 100 |
| Specialized subjects | Laboratory Work in General Biology II | 1 | Required | 3rd semester | | | | | | | | 100 | 1 | | | | | | | 100 |
| Specialized subjects | Laboratory Work in General Chemistry | 1 | Required | 3rd semester | | | | | | | | 100 | 1 | | | | | | | 100 |
| Specialized subjects | Laboratory Work in General Physics | 1 | Required | 3rd semester | | | | | | | | 100 | 1 | | | | | | | 100 |
| Specialized subjects | Introduction to Applied Biological Science II | 2 | Elective required | 2nd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Seminar in Field Science | 2 | Elective required | 2nd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Research Front of Bioresource Science | 2 | Elective required | 2nd semester | 50 | 1 | | | | | | | | | | | 50 | 1 | | 100 |
| Specialized subjects | Research Front of Food and AgriLife Science | 2 | Elective required | 2nd semester | 50 | 1 | | | | | | | | | | | 50 | 1 | | 100 |
| Specialized subjects | Overseas Exercise of Applied Biological Science I | 2 | Elective required | 3rd semester | | | 50 | 1 | | | | | | | 50 | 1 | | | | 100 |
| Specialized subjects | Overseas Exercise of Applied Biological Science II | 2 | Elective required | 3rd semester | | | 50 | 1 | | | | | | | 50 | 1 | | | | 100 |
| | X . 1 | | | | | | | | | | | | | | | | | | | |
| Specialized subjects | Introduction to Physiology | 2 | Elective required | 3rd semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Public Health | 2 | Elective required | 6th semester | | | 100 | 1 | | | | | | | | | | | | 100 |
| Specialized subjects | Global Environmental Issues and Managements | 3 | Elective | 4th semester | | | | | 100 | 1 | | | | | | | | | | 100 |
| Specialized subjects | Modern Food Science | 3 | Elective required | 4th semester | | | | | 100 | 1 | | | | | | | | | | 100 |
| Specialized subjects | Fish Production | 3 | Elective | 4th semester | | | | | 100 | 1 | | | | | | | | | | 100 |
| Specialized subjects | Plankton Biology | 3 | Elective required | 4th semester | | | | | 100 | 1 | | | | | | | | | | 100 |

| Specialized subjects | Animal Science and Technology | 3 | Elective required | 4th semester | | 100 | 1 | | | | | | | | | | | 100 |
|-------------------------|---|----|----------------------|-----------------------------|--|-----|---|--|--|-----|---|----|---|----|---|----|---|-----|
| Specialized subjects | Physiology of Field Crop Production | 3 | Elective required | 4th semester | | 100 | 1 | | | | | | | | | | | 100 |
| Specialized subjects | Introduction physiology of Domestic Animals | 3 | Elective required | 4th semester | | 100 | 1 | | | | | | | | | | | 100 |
| Specialized subjects | Molecular Agro-life Science | 3 | Elective required | 4th semester | | 100 | 1 | | | | | | | | | | | 100 |
| Specialized subjects | Molecular-level Understanding of Functionality of Foods | 3 | Elective required | 4th semester | | 100 | 1 | | | | | | | | | | | 100 |
| Specialized subjects | Resource Management | 3 | Elective required | 4th semester | | 100 | 1 | | | | | | | | | | | |
| Specialized subjects | Packaged subjects provided in overseas partner university | 12 | Elective required | 4th, 6th, and 8th semesters | | | | | | | | 80 | 1 | | | 20 | 1 | 100 |
| Specialized subjects | Specialized subjects packaged for each area | 10 | Required | 5th - 8th semesters | | | | | | 100 | 1 | | | | | | | 100 |
| Specialized subjects | Graduate Thesis I | 2 | Required | 5th semester | | | | | | | | | | 20 | 1 | 80 | 1 | 100 |
| Specialized subjects | Graduate Thesis II | 2 | Required | 6th semester | | | | | | | | | | 20 | 1 | 80 | 1 | 100 |
| Specialized subjects | Graduate Thesis III | 2 | Required | 7th semester | | | | | | | | | | 20 | 1 | 80 | 1 | 100 |
| Specialized subjects | Graduate Thesis IV | 2 | Required | 8th semester | | | | | | | | | | 20 | 1 | 80 | 1 | 100 |

Attachment 4

Curriculum map for Applied Biological Science Program

| ad | Study achievementStudy chievementStudy achievement | 1st | year | 2nd | year | 3rd | year | 4th y | /ear |
|--|---|--|---|---|--------------|--------------|-------------------|--------------|--------------|
| | Evaluation items | 1st semester | 2nd semester | 3rd semester | 4th semester | 5th semester | 6th semester | 7th semester | 8th semester |
| | | Peace Science Courses (©) | Research Front of Bioresource Science (O) | | | | | | |
| | understanding required to see a phenomenon from a | Seminar for developing intelligence (©) | Research Front of Food and AgriLife Science (O) | | | | | | |
| | and for action based on comprehensive and cross- | Introduction to University Education (©) | | | | | | | |
| | disciplinary thinking | | | 展開ゼミ(英語名 | がわかりません) | | | | |
| | | | | | | | | | |
| | | Basic Calculus / Elements of Calculus (⊚) | Organic Chemistry (©) | Statistics in Biology (©) | | | Public Health (O) | | |
| anding | | General Chemistry (©) | Cell Science (©) | Environmental Sciences for Bioproduction (©) | | | | | |
| derst | | Introduction to Applied Biological Science I(©) | Species Biology (©) | | | | | | |
| dge & ur | | Introduction to Microbiology (©) | Introduction to Molecular Biochemistry (©) | Introduction to Physiology (O) | | | | | |
| dingKnowle | Basic knowledge and understandings required for | | Agricultural Production Resources (©) | Overseas Exercise of Applied Biological Science I (O) | | | | | |
| ledge & understandingKnowledge & understanding | acquiring expertise | | Physics for Applied Biological Science (©) | Overseas Exercise of Applied Biological Science II (O) | | | | | |
| 'ledge & | | | Introduction to Applied Biological Science II (O) | | | | | | |

| | Ethics of Science | |
|-------------------------------|-------------------|----------------------------|
| | | |
| Ι <u>Ϋ́</u> | and Technology | |
| ling | (◎) | |
| P | Introduction to | |
| a la | Molecular | |
| IS | | |
| Knowledge & understandingKnow | Biochemistry (©) | |
| ur | Seminar in Field | |
| | | |
| 80 | Science (O) | |
| <u>6</u> | | Global Environmental |
| 0 | | Issues and Managements |
| 3 | | |
| 2 | | Modern Food Science (O) |
| <u> </u> Z | | |
| | | |
| | | Insect Science (O) |
| | | |
| | | Fish Production (O) |
| | | |
| | | |
| | | Plankton Biology (O) |
| Knowledge and | | |
| understanding regarding | | Animal Science and |
| applied biological sciences | | Technology (O) |
| applied biological sciences | | Physiology of Field Crop |
| | | Production (O) |
| | | Introduction physiology of |
| | | Domestic Animals (O) |
| | | Molecular Agro-life |
| | | Science (O) |
| | | |
| | | Molecular-level |
| | | Understanding of |
| | | Functionality of Foods (O) |
| | | |
| | | Resource Management (O) |
| | | |

| | Desis communication | Foreign Languages (| (O)(©) | | | | | | |
|-------------|--|---|--|---|--|-----|--|---------------------|--|
| | Basic communication, | Information and Data | a Science Courses | | | | | | |
| | information processing, and physical activities | (©) | | | | | | | |
| | priysical activities | Health and Sports Co | ourses (O) | | | | | | |
| | Basic experiment abilities and skills required for acquiring expertise | "Basic Laboratory Work in Chemistry" | | | | | | | |
| | | | "Experimental Methods and Laboratory Work in Biology I" | | | | | | |
| | | | | Laboratory Work in General Biology I & II (©) | | | | | |
| oility & sk | | | | Laboratory Work in General Chemistry (^(©)) | | | | | |
| & skillsAt | | | | Laboratory Work in General Physics (©) | | | | | |
| ~ | Intellectual ability and skills | | | | | Spe | cialized subjects pac | kaged for each area | (©) |
| | for research areas regarding | | | | | | | | |
| | applied biological sciences | | | | | | | | |
| | Scientific English ability | | | of Applied Biological Science I (O) | Packaged subjects provided in overseas partner university (©) | | Packaged subjects provided in overseas partner university (©) | | Packaged subjects provided in overseas partner university (©) |
| | required for reading specialized treatises and providing presentations in English | | | Overseas Exercise of Applied Biological Science II (O) | | | | | |
| | - | Foreign Languages (| (O)(©) | | | | | | |

| Ability to collect information related to peripheral | Research Front of Bioresource | | Graduate Thesis I (©) | Graduate Thesis II (©) | Graduate Thesis III (©) | Graduate Thesis IV (©) |
|--|--|--|--------------------------|---|----------------------------|---|
| disciplines to complement the knowledge regarding the specialized area and consider issues regarding | Research Front of Food and AgriLife | | | | | |
| applied biological science from diversified points of view | | | | | | |
| Ability to organize own ideas, demonstrate an apprehension based on those ideas, logically represent own conclusion orally or in writing, and exchange ideas in English regarding areas of applied biological sciences in which themes in integrated hyidrosphere science, applied animal & plant science, food science, and molecular agricultural and life science are discussed from diverse points of view. | | Packaged subjects provided in overseas partner university (©) | Graduate Thesis I (©) | Graduate Thesis II (©) Packaged subjects provided in overseas partner university (©) | Graduate Thesis III (©) | Graduate Thesis IV (©) Packaged subjects provided in overseas partner university (©) |

(Example) Liberal arts subjects Specialized fundame Specialized subjects Graduation thesis ([©]) Required subject (O) Elective requirer (Δ) Elective subjects

List of Faculty Members of the Applied Biological Science Program

The curriculum for this program is composed to allow students studying beyond borders between the major programs, i.e. the Integrated Hydrosphere Science Program, Applied Animal & Plant Science Program, Food Science Program, and Molecular Agricultural and Life Science Program. Therefore, faculty members of this program consist of the vice dean for education and the vice dean for international.

In addition to that, faculty members who are engaged in tutorials for graduation theses may join as faculty members of this program.

The list of the faculty members of the program is separately provided to students who are allocated to the program.

Name of faculty

Name of program and position Extension Laboratory number

Mail address