

## 平成30年度入学生対象

別記様式 1

主 専 攻 プ ロ グ ラ ム 詳 述 書

開設学部（学科）名〔生物生産学部（生物生産学科）〕

プログラムの名称（和文）	動物生産科学主専攻プログラムプログラム
（英文）	Animal Science Program

1. 取得できる学位 学士（農学）

### 2. 概要

生物生産学部の5つの主専攻プログラム（生物圏環境学、水産生物学、動物生産科学、食品科学および分子細胞機能開発学）では、生物生産に係わる自然科学から社会科学に及ぶ幅広い知識と知恵を身につけさせることを目的とする。具体的には、①生物資源と食料生産、バイオテクノロジー、生物環境の保全に関する基礎的知識の修得、②フィールド科学分野の体験学修、③生命倫理や技術者倫理の理解、④英語等の語学能力や情報処理能力の修得を目指した教育を行う。

動物生産科学主専攻プログラムは、6つの教育科目（家畜遺伝育種学、家畜生殖学、家畜飼養学、家畜管理学、家畜生体機構学、西条ステーション（農場））に所属する教員により実施され、動物の生産と利用に関する基礎的な知識と技術を体系的に身につけ、関連分野の情勢を広く洞察し、問題解決に取り組むことのできる人材を育成する。このために履修する学生は、動物の生理機能を理解し、新たな有用機能の開発、健全で近代的な生産の理論と技術、自然と人と動物との関わり、生産物の食品への利用等を学ぶ。これらの内容についての知識・理解は講義を通じて学修するとともに、フィールドでの体験的実習や動物を用いた実験を通じて知的・実践的能力を修得する。また、外書講読を通じて国際的な視野を養う。さらに、卒業論文研究において総合的な能力を高める。

本プログラムの意義は、品質と安全性に優れた動物性食資源の増産および安定的な供給や、自然環境と人間生活の豊かさを向上させるための動物資源の応用等の、動物生産分野で貢献できる基礎的な能力と、これに関連する国際的な広い視野と技術者倫理を涵養することにある。

本プログラムを修了した学生は、大学院への進学や農林水産関係の官公庁、食品・化学・医薬等に関係する業界で、国際的視野を持った研究者・専門技術者となることを期待する。

### 3. ディプロマ・ポリシー（学位授与の方針・プログラムの到達目標）

動物生産科学主専攻プログラムでは、品質と安全性に優れた動物性食資源の増産および安定的な供給や、自然環境と人間生活の向上を目的とした動物資源の応用等に関わる分野の専門技術者等として活躍できる人材を養成する。そのため本プログラムでは、以下の能力を身につけ、基準となる単位を修得すると共に規定の到達目標に達し、かつ生物生産学部が定める審査に合格した学生に「学士（農学）」の称号を授与する。

教養教育を通して

1. 自主的・自立的に学修する態度を習慣づけており、情報収集力・分析力・批判力を身につけ、これらを活用できる。
2. ものごとの本質と背景を広い視野から洞察する力や、国際人として生きるにふさわしい語学力と平和に関する関心を持っている。
3. 幅広い知識から、問題を発見し、真に問題解決に役立つ「知識体系」へと統合し、総合的な見地からものごとを俯瞰できる。
4. 一般的な科学的基礎知識を持ち、生物生産学の専門領域への応用展開に必要な知識と技能を理解できる。

専門教育（専門基礎科目）を通して

5. 生物及び生物圏に関する先端的な話題や基本的な概念を理解できる。
6. 生物生産学の価値志向性やグローバル化した社会との関わりを理解でき、科学の応用における対話や合意形成の重要性を理解できる。
7. 研究上の不正行為の問題性と研究者・技術者倫理の重要性を理解できる。

本プログラムの専門教育を通して

7. 動物資源の生産・利用に関わる生命現象について分子レベルから生態系に至るまで体系的に理解できる。
8. 動物を生産・利用する上で必要な遺伝育種学、生殖学、飼養学、管理学、生体機構学、フィールド科学等の学問領域において、情報の収集・分析力や研究手法を体系的に習得し、実践的に応用・活用できる。
9. 動物資源の食料生産における役割と動向、人間生活への応用、自然環境との関わりなどを学ぶことにより得た知識・技能・態度等を総合的に活用し、かつ国際的な範囲まで洞察して、動物生産の課題を理解・解決し、結論を文章や口頭で論理的に表現し、議論することができる。

### 4. カリキュラム・ポリシー（教育課程編成・実施の方針）

動物生産科学主専攻プログラムでは、プログラムが掲げる到達目標を学生に実現させるために、次の方針に従って教育課程を編成し、実践する。

## For entrants in AY 2018

Appended Form 1

Specifications for Major Program

Name of School (Program) [School of Applied Biological Science comprises]

Program name (Japanese)	動物生産科学主専攻プログラムプログラム
(English)	Animal Science Program

1. Degree to be obtained: Bachelor of Agriculture

### 2. Overview

In the five major programs of the School of Applied Biological Science (Integrated Ecoscience Program, Fisheries Biology Program, Animal Science Program, Food Science Program, and Applied Molecular and Cellular Biology Program), the aim is to enable students to acquire a wide range of knowledge and wisdom in the realms of natural and social sciences related to applied biology. Specifically, we provide education that allows students to ① acquire basic knowledge regarding biotic resources and food production, biotechnology, and protection of the biological environment; ② gain experience in field science; ③ understand bioethics and engineering ethics; and ④ obtain capabilities in foreign languages such as English and in data processing.

In the Animal Science Program, education is provided by faculty members belonging to six educational subjects (animal breeding and genetics, animal reproduction, animal nutrition and feeding, animal behavior and physiology, animal histophysiology, and Saijo Station (terrestrial field science)) enabling students to acquire basic knowledge and skills regarding animal production and use, and to be capable of widely considering issues in related areas, and of solving problems. To achieve the goal described above, in this program students study to develop their understanding of matters such as animal physiology; the development of useful new functions; the theory and technology for healthy, modern production; the relationship between nature, human beings, and animals; and the use of products for food. Students gain knowledge and skills related to these areas by attending lectures, and they also acquire intellectual and practical abilities by conducting practical fieldwork and animal experiments. In addition to this, they broaden their international perspective by participating in the foreign text reading course. Furthermore, students improve their abilities comprehensively by undertaking graduation research.

This program aims to enable students to develop basic capabilities that can be used in areas of animal production related to such issues as the increased production and stable supply of animal food resources that are superior in quality and safety, the application of animal resources for improving the natural environment and human life, and the enhancement of an international outlook and engineering ethics.

The students educated in the program are expected to go on to graduate school, or to become researchers and specialists with an international outlook working in institutions such as the public office for agriculture and fisheries, or in business fields related to foods and chemical/pharmaceutical products.

### 3. Diploma policy (policy for awarding degrees and goal of the program)

The Animal Science Program aims to develop professionals who are capable of working as specialists in fields related to issues such as the increased production and stable supply of animal food resources that are superior in quality and safety, and the application of animal resources for improving the natural environment and human life. Therefore, in this program, the degree of Bachelor of Agriculture will be awarded to students who have earned the required credits and certification to satisfy the specified level of achievement, passed the examination that is administered by the School of Applied Biological Science, and acquired the following abilities.

Through liberal arts education, the student is required to acquire:

1. The ability to study independently, collecting, analyzing, and criticizing data, together with the willingness to demonstrate of the use of this ability;
2. Insight from a broad perspective into the essentials and background of phenomena, and the linguistic ability and interest in peace that are required for a citizen of the world;
3. The ability to identify a problem based on broad knowledge, to integrate findings to establish a "knowledge system" that is truly useful for problem solving, and to examine phenomena from a comprehensive perspective; 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 specialized fields of applied biological science.

Through the specialized education (specialized basic subjects), the student is required to acquire:

5. The ability to understand advanced topics and basic ideas related to organisms and the biosphere;
6. The ability to understand the value, orientation, and relevance to the globalized society of applied biology, and the importance of communication and consensus building related to the application of scientific results; and
7. An understanding of the 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:

7. A systematic understanding of biological phenomena related to the production and use of animal resources, from the molecular level to the ecosystem level;
8. Data collection and analysis capabilities, and systematic skills, for conducting research in academic fields related to issues such as breeding and genetics, reproduction, nutrition and feeding, behavior and physiology, histophysiology, and field science required for the production and use of animal resources, as well as the ability to

<div>1. 教養教育では、平和を希求し、幅広く深い教養と総合的な判断力を培い、豊かな人間性を涵養することを目指し、さらに実用的外国語運用能力、国際的視野や異文化理解能力、情報活用能力やコミュニケーション能力を養成する。また、教養教育の中に基盤科目を配置し、生物生産学の専門領域への応用展開に必要な科学的な基礎知識と技能を理解する能力を養成する。</div> <div>2. 専門教育では、まず、学部共通の「専門基礎科目」を通して、生物及び生物圏に関わる専門基礎力を養成する。この中には、海外演習、インターンシップ、フィールド演習、科学技術倫理学も含まれ、国際社会及び地域社会において指導的な活動をするための想像力と実践性を備えた基礎力、並びに研究上の不正行為の問題性と研究者・技術者倫理の重要性を理解する能力を養成する。</div> <div>3. 本プログラムの専門教育では、遺伝育種学、生殖学、飼養学、管理学、生体機構学、フィールド科学等に関する「専門科目」を通して、生物を体系的に理解することのできる能力、および、当該分野の「演習」や「実験」を通じて、実践的に応用・活用できる技能や姿勢を修得する教育を実施する。さらに「卒業論文」により、コミュニケーション・プレゼンテーション・実践的外国語能力も含めた総合的な問題解決能力を身につけた人材を養成する。</div> <div>4. 学修の成果は、各科目の成績評価と共に本プログラムで設定する到達目標への到達度の2つで評価する。</div> <div>5. 開始時期・受入条件</div> <div>生物生産学部では、生物生産学科として一括して入学試験を行う。入学後、1年次前・後期および2年次前期において、全学向けに開講されている教養教育科目（教養ゼミ・平和科目・パッケージ別科目・外国語科目・情報科目・領域科目・健康スポーツ科目）を中心に履修する。動物生産科学主専攻プログラムへの実質的な配属時期は、2年次後期である。</div> <div>学生は入学後の1年間、基盤科目を履修し、専門分野を学ぶために必要な基礎的知識を学修する。その後、2年次の前期では、生物生産学部共通に関わる専門基礎科目を中心に履修する。特に、生物生産学部共通の実験科目として、基礎化学実験、基礎物理学実験、基礎生物学実験Ⅰ・Ⅱ（コンピューター演習を含む）を履修し、生物生産学部共通で必要とされる幅広い分野における基礎的な実験トレーニングを行う。この2年次前期までに、幅広い教養と、英語等の語学能力や情報処理能力、生物生産学部として共通の基礎的知識、生命倫理や技術者倫理を修得するとともに、各学生が各主専攻プログラムの教育目標、特徴等を十分理解し、最適なプログラムを選択する。</div> <div>生物生産学部には、生物圏環境学、水産生物科学、動物生産科学、食品科学および分子細胞機能学の5つのコースがあり、それぞれが生物圏環境学、水産生物科学、動物生産科学、食品科学および分子細胞機能学という5つの同名の主専攻プログラムを提供している。2年次後期に、本人の希望と成績により、以下の「コース分属方法」によって、5つのコースに分属する。各コースに分属された学生は、同名のプログラムを主専攻プログラムとして履修する。</div> <div>(コースへの分属方法)</div> <div>その年度の分属対象者を各コースの特任教員を除いた教員数を基準に比例配分して各コースに分属することを原則とする。ただし、小数点以下は繰り上げる。</div> <div>参考教員数（平成29.4.1現在）：</div> <div>生物圏環境学（12）、水産生物科学（15）、動物生産科学（15）、食品科学（12）、分子細胞機能学（10）</div> <div>なお、各コースに分属されるためには、規定の「コース分属要件」を満たさなければならない。</div> <div>6. 取得可能な資格</div> <div>○家畜人工授精師免許の申請資格</div> <div>○教育職員免許状の資格</div> <div>1. 高等学校教諭（理科）一種免許</div> <div>○学芸員の資格</div> <div>○食品衛生管理者および食品衛生監視員の任用資格</div> <div>※取得に関する詳細は、「学生便覧」を参照すること。</div> <div>7. 授業科目及び授業内容</div> <div>※授業科目は、別紙1の履修表を参照すること。(履修表を添付する。)</div> <div>※授業内容は、各年度に公開されるシラバスを参照すること。</div> <div>8. 学修の成果</div> <div>各学期末に、学修の成果の評価項目ごとに、評価基準を示し、達成水準を明示する。</div> <div>各評価項目に対応した科目の成績評価を <b>S=4、A=3、B=2、C=1</b> と数値に変換した上で、加重値を加味し算出した評価基準値に基づき、入学してからその学期までの学修の成果を「極めて優秀(Excellent)」,「優秀(Very Good)」,「良好(Good)」の3段階で示す。</div> <table><tr><td>学修の成果</td><td>評価基準値</td></tr><tr><td>極めて優秀(Excellent)</td><td>3.00～4.00</td></tr><tr><td>優秀(Very Good)</td><td>2.00～2.99</td></tr><tr><td>良好(Good)</td><td>1.00～1.99</td></tr></table>	学修の成果	評価基準値	極めて優秀(Excellent)	3.00～4.00	優秀(Very Good)	2.00～2.99	良好(Good)	1.00～1.99	<div>practically use and apply these skills; and</div> <div>9. The capacity to comprehensively apply the knowledge, skills, and attitudes obtained through the study of animal resources, their role in food production and current trends related to this role, their application to human life, and their relationship to the natural environment, while considering also the international aspects, as well the ability to understand and solve problems in animal production, to logically present conclusions orally or in writing, and to discuss with others.</div> <div>4. Curriculum policy (policy for organizing and implementing the curriculum)</div> <div>To enable students to achieve the targets that have been set for the Animal Science Program, the curriculum is organized and implemented according to the following policies:</div> <div>1. Liberal arts education courses aim to impart wide-ranging and in-depth education and general intelligence, and to foster deep humanity with a 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 utilize information and communication. In addition to this, courses in basic subjects are integrated into the liberal arts education in order to develop the basic scientific knowledge and skills required for application in any of the specialized fields of applied biological science.</div> <div>2. Specialized education courses develop the basic capabilities related to organisms and the biosphere through the "specialized fundamental subjects" that are common to all programs in the School of Applied Biological Science. The courses include overseas exercises, internships, fieldwork, and lectures regarding ethics in science and engineering, in order to develop the imagination and practical basic capabilities required for working in a leading position in the international and/or local community. The courses also aim to develop the ability to understand problems regarding research misconduct, and the importance of research and engineering ethics.</div> <div>3. The courses in specialized education for this program provide the "specialized subjects" related to breeding and genetics, reproduction, nutrition and feeding, behavior and physiology, histophysiology, and field science in order to enable students to understand organisms in an integrated manner. Also the courses in "exercises" and "experimentation and practice" in related areas are provided in order for students to acquire the skills and attitudes to practically apply and make use of their results. In addition to this, students develop general capabilities for problem solving, including skills for communication, presentation, and practical foreign language abilities, while preparing their "graduation thesis."</div> <div>4. The achievement in education is evaluated based on the grade scores for the subjects and the level of achievement against the target set for this program.</div> <div>5. Start time and acceptance conditions</div> <div>The School of Applied Biological Science holds the entrance examination together with the Department of Applied Biological Science. In the first and second semesters of the first year and the first semester of the second year, students mainly take the liberal arts subjects that are common to the whole university (educational seminars, subjects related to peace, package subjects, foreign languages, data processing, area subjects, and subjects related to health and sports). Assignment of students to the Animal Science Program is conducted in the second semester of the second year.</div> <div>Students study the basic subjects for one year after entering the university, in order to acquire the basic knowledge required for studying the specialized fields. They then mainly study the specialized basic subjects common to all students of the School of Applied Biological Science in the second semester of the second year. In particular, they take the subjects Laboratory Work in General Chemistry, Laboratory Work in General Physics, and Laboratory Work in General Biology I &amp; II (including computer exercises), since these relate to experimentation, are common to all students of the School of Applied Biological Science, and consist of receiving the basic training in in a wide range of experimentation procedures that is commonly required for the students of the School of Applied Biological Science. By the first semester of the second year, students acquire a wide-ranging education, ability in foreign languages such as English, data processing skills, the basic knowledge common to students of the School of Applied Biological Science, and an understanding of bioethics and engineering ethics, in order to allow them to understand the aim and characteristics of each major program and select the most appropriate program.</div> <div>The School of Applied Biological Science comprises five courses, i.e. the Integrated Ecoscience Course, the Fisheries Biology Course, the Animal Science Course, the Food Science Course, and the Applied Molecular and Cellular Biology Course, and each of these provides an educational program under the same name as its course name, i.e. the Integrated Ecoscience Program, the Fisheries Biology Program, the Animal Science Program, the Food Science Program, and the Applied Molecular and Cellular Biology Program. The student is allocated to one of the five courses based on his/her wishes and level of achievement, according to the "course allocation method" described below. The allocated student takes the program with the name of the course to which he/she is allocated as his/her major program.</div> <div>(Course allocation method)</div> <div>Students who are to be allocated to the courses in a given year are allocated to each course proportionally to the number of faculty members, excluding specially appointed faculty members, for each course. In making these calculations, digits after a decimal point are rounded up.</div> <div>Number of faculty members (as of April 1, 2017):</div> <div>Integrated Ecoscience Course (12), Fisheries Biology Course (15), Animal Science Course (15), Food Science Course (12), and Applied Molecular and Cellular Biology Course (10)</div> <div>The student must meet the specified "requirements for allocation to the course" in order to be allocated to the course.</div> <div>6. Obtainable qualifications</div> <div>○ Qualification for livestock artificial insemination license</div> <div>○ Educational personnel certification</div> <div>1. Type 1 License for High School Teacher (Science)</div>
学修の成果	評価基準値								
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C（可：60～69 点）	1																				
<div>※別紙 2 の評価項目と評価基準との関係を参照すること。</div> <div>※別紙 3 の評価項目と授業科目との関係を参照すること。</div> <div>※別紙 4 のカリキュラムマップを参照すること。</div>	<div>7. Class subjects and their contents</div> <div>* For the class subjects, refer to the subject table in Attachment 1. (The subject table is to be attached.)</div> <div>* For the details of the class subjects, refer to the syllabus that is published for each academic year.</div>																				
	<div>8. Academic achievement</div> <div>The evaluation criteria are specified for each evaluation item for academic achievement, and the level of achievement against the criteria is given at the end of the semester.</div> <div>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 the time the student entered the university to the end of the current semester, is determined using these values while applying weightings. The evaluation standard values correspond to three levels, i.e. Excellent, Very Good, and Good.</div> <table><tr><td>Study achievement</td><td>Evaluation standard</td><td>Achievement evaluation</td><td>Numerical conversion</td></tr><tr><td>Excellent</td><td>3.00 - 4.00</td><td>S (Excellent: 90 or more points)</td><td>4</td></tr><tr><td>Very Good</td><td>2.00 - 2.99</td><td>A (Very good: 80 - 89 points)</td><td>3</td></tr><tr><td>Good</td><td>1.00 - 1.99</td><td>B (Good: 70 - 79 points)</td><td>2</td></tr><tr><td></td><td></td><td>C (Passed: 60 - 69 points)</td><td>1</td></tr></table> <div>* Refer to the relationship between evaluation items and evaluation criteria described in Attachment 2.</div> <div>* Refer to the relationship between evaluation items and class subjects described in Attachment 3.</div> <div>* Refer to the curriculum map in Attachment 4.</div>	Study achievement	Evaluation standard	Achievement evaluation	Numerical conversion	Excellent	3.00 - 4.00	S (Excellent: 90 or more points)	4	Very Good	2.00 - 2.99	A (Very good: 80 - 89 points)	3	Good	1.00 - 1.99	B (Good: 70 - 79 points)	2			C (Passed: 60 - 69 points)	1
Study achievement	Evaluation standard	Achievement evaluation	Numerical conversion																		
Excellent	3.00 - 4.00	S (Excellent: 90 or more points)	4																		
Very Good	2.00 - 2.99	A (Very good: 80 - 89 points)	3																		
Good	1.00 - 1.99	B (Good: 70 - 79 points)	2																		
		C (Passed: 60 - 69 points)	1																		
<div>9. 卒業論文（卒業研究）(位置づけ，配属方法，時期等)</div> <div>○目的</div> <div>本プログラムにおける卒業研究では，先端的な研究にかかわることによって，動物生産科学分野での今日的課題やその背景を体系的に理解し，課題解決のための基礎的な研究手法を学ぶと共に，得られた結果の解析と考察を通じて総合的な能力を身につけることを目的とする。</div> <div>○概要</div> <div>学生は，家畜育種遺伝学，家畜生殖学，家畜飼養学，家畜管理学，家畜生体機構学，フィールド科学教育研究センター西条ステーション（農場）のいずれかの研究室に所属し，指導教員の指導のもとで，研究の計画作成，実施，解析と考察を行い，最終的に卒業論文として取りまとめる。また，研究計画および成果について口頭発表を行う。</div> <div>○配属時期と配属方法</div> <div>1. 配属時期は，3 年次後期とする。</div> <div>2. 配属は，本主専攻プログラムが定めた規定の配属方法にしたがい，担当チューターの指導のもとで行う。担当チューターは，2 年次にガイダンスを開催し，各教員の専門を学生に周知させる。また，学生に卒業論文発表会や修士論文発表会に参加するよう指導し，各教員の研究内容を理解させる。3 年次前期には，学生が各研究室を訪問し，卒業論文の内容や研究室の状況を把握する。</div> <div>各研究室に概ね均等に配属されるようにチューターを中心として人数調整を行う。調整困難な場合はチューターが成績に基づき調整を行う。</div>	<div>9. Graduation thesis (graduation research) (meaning, student allocation, timing, etc.)</div> <div>○ Purpose</div> <div>The graduation research in this program aims to allow the student to dedicate himself/herself to cutting-edge research in order to systematically reach an understanding of contemporary problems and their background in the field of animal production science, and to acquire comprehensive capabilities while analyzing and considering his/her obtained results.</div> <div>○ Overview</div> <div>Students are allocated to the laboratory of animal breeding and genetics, the laboratory of animal reproduction, the laboratory of animal nutrition and feeding, the laboratory of animal behavior and physiology, the laboratory of animal histophysiology, or Saijo Experimental Farm and Field Science Center, in order to plan for, execute, analyze, and examine the results of their research under the instruction of a supervisor. Finally they organize their results into a graduation thesis. Oral presentations are held for the research plan and results.</div> <div>○ Student allocation timing and method</div> <div>1. Students are allocated to a laboratory in the second semester of the third year.</div> <div>2. Students are allocated to a laboratory under the guidance of the tutor in charge, according to the allocation method stipulated for this major program. The tutor holds a guidance seminar for students in their second year to explain the specialties each supervisor. The tutor also instructs students to attend the presentation assembly for graduation theses and master theses in order to gain a better understanding of the details of the research undertaken by each supervisor. Students visit laboratories when they are in the first semester of the third year to learn about the details of the graduation thesis and the situation in the laboratory.</div> <div>The number of students who are allocated to each laboratory is adjusted under the guidance of the tutor so that they are uniformly distributed among laboratories. If it is difficult to adjust the number of students, the tutor determines the student to be allocated based on the grades that the student has earned.</div>																				
<div>10. 責任体制</div> <div>(1) PDCA 責任体制（計画(plan)・実施(do)・評価 (check)・改善 (action)）</div> <div>1. 計画（plan）・実施(do)は，学部教務委員会および講義担当者が行う。</div> <div>2. コースは，責任を持って主専攻プログラムを計画・実施する。その責任者としてコース主任を置く。</div> <div>3. 学部教務委員会は，学部で実施される主専攻プログラムを統括する。</div> <div>4. 学部教務委員会は，各コースから選出された 5 名の委員と学部から選出された委員長等からなる。</div> <div>5. 評価検討(check)は，教育改革推進委員会が行う。</div> <div>6. 教育改革推進委員会は，各コースから選出された 5 名の委員と学部から選出された委員長，学部教務委員長，研究科長補佐からなる。</div> <div>7. 教育改革推進委員会は，各コースが実施した主専攻プログラムの評価検討を行い，その結果を学部教務委員会，コースに報告し，助言・勧告を行う。</div> <div>8. 対処(action)は，主専攻プログラムの実施責任母体であるコース委員会が行う。</div> <div>9. コース委員会，学部教務委員会は，教育改革推進委員会が行った評価検討後の報告および助言・勧告を尊重し，改善のための計画案を作り，実施する。</div> <div>コース委員会，学部教務委員会，教育改革推進委員会は，各役割を責任もって実行し，お互いに連携をとりながら，学部教育の計画(plan)・実施(do)・評価検討(check)・対処(action)を行い，学部教育の改善に勤める。</div> <div>(2) プログラムの評価</div> <div>(a) プログラム評価の観点</div> <div>本プログラムでは，「教育的効果」と「社会的効果」を評価の観点とする。</div> <div>「教育的効果」では，プログラムの実施に伴う学生の学修効果を判定する。</div> <div>「社会的効果」では，プログラムの学修結果の社会的有効性を判定する。</div> <div>(b) 評価の実施方法</div> <div>本プログラムでは，上記の評価の観点に従い，4 年次後期にプログラムの成果を評価する。</div> <div>「教育的効果」に関しては，本プログラムを学修した学生の成績および到達度について，実施した教員グループによる総合的な評価を行う。また，学生全体のプログラム達成水準を評価し，点検する。</div>	<div>10. Responsibility</div> <div>(1) Responsibility for PDCA (plan, do, check, and act) cycle</div> <div>1. The education affairs committee of school and the faculty members who provide the lectures are engaged in the "plan" and "do" processes.</div> <div>2. Each course has responsibility for planning and executing its major program. A chief faculty member is designated as the supervisor of the course.</div> <div>3. The education affairs committee of the school exercises control over the major programs provided by the school.</div> <div>4. The education affairs committee of the school consists of five members who are elected from each course, and a chairman who is chosen by the school.</div> <div>5. The education reform promotion committee is engaged in the process of "check."</div> <div>6. The education reform promotion committee consists of five members who are elected from each course, a chairman who is chosen by the school, the chairman of the education affairs committee of the school, and an assistant chief of the graduate course.</div> <div>7. The education reform promotion committee reviews and evaluates the major programs provided in each course, reports the results to the education affairs committee of the school and the courses, and provides</div>																				



<p>「社会的効果」に関しては、本プログラムの内容と密接に関連する企業への就職率，公務員試験合格率等を調べ，評価を行う。一定期間毎に，学生の主に就職する企業の人事担当者にプログラムの評価を依頼する。さらに，卒業生にも，当人の自己評価およびプログラムの評価を依頼する。企業および卒業生に依頼するプログラムの評価の内容は，プログラムの各授業科目およびその内容が社会的活動を行う上で有益であったか，授業内容が科学技術の変化や社会の変化に対応しているか，今後必要となる授業科目はないか等について，評価や意見を求める。</p> <p>(c) 学生へのフィードバックの考え方とその方法</p> <p>教育改革推進委員会は，一定期間毎に，学生へのアンケートやヒアリングを行い，プログラムを点検・評価するとともに，プログラム内容の見直し，改善のための助言・勧告を行う。</p>	<p>advice and recommendations.</p> <p>8. The course committee that takes the responsibility for execution of the major program is engaged in the process of "act."</p> <p>9. The Course committee and the education affairs committee of the school prepare and execute a plan for improvement taking into consideration the report, advice, and recommendations that are provided by the education reform promotion committee after the “check” process.</p> <p>The course committee, the education affairs committee of the school, and the education reform promotion committee cooperate with one another to execute their roles with responsibility in the "plan", "do", "check", and "act"cycle in order to improve the education provided by the school.</p> <p>(2) Evaluation of the program</p> <p>(a) Perspectives for evaluation of the program</p> <p>This program is evaluated from the perspectives of "educational effectiveness" and "social effectiveness." The "educational effectiveness" is evaluated by the effects of the implementation of the program on the educational achievement of the students.</p> <p>The "social effectiveness" is evaluated by the effects of educational achievement in the program on society.</p> <p>(b) Evaluation method</p> <p>In this program, achievement in the program is evaluated from the perspectives described above for students in the second semester of the fourth year.</p> <p>For "educational effectiveness", the results and achievements 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.</p> <p>“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 member of human resources staff from a company that mainly employs students from this program to evaluate the program. In addition to this, we request graduates of this program to evaluate their own achievement and that of program. The staff working in companies and other graduates are requested to provide evaluation and advice regarding whether the class subjects and their contents in this program had a positive effect on their social activities, whether the contents of the classes appropriately corresponded to changes in science, technology, and society, and any additional class subject that may be required in the future.</p> <p>(c) Policy and method for feedback to students</p> <p>The education reform promotion committee regularly conducts surveys and interviews for students to review and evaluate the program, improve the contents of the program, and provide advice and recommendations for improvement.</p>
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○ Table of Registration Standards for Major Programs in the Animal Science Course  
(Specialized Subjects)

Type	Subject type	Required No. of credits	Class subjects	No. of credits	Year in which the subject is taken								
					1st grade		2nd grade		3rd grade		4th grade		
					Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	
Specialized Education Subjects	Specialized Subjects	5 6	Animal Breeding and Genetics	2				○					
			Practice for Animal Breeding and Genetics	1				○					
			Animal Reproduction	2				○					
			Laboratory Work in Animal Reproduction	1				○					
			Animal Nutrition	2				○					
			Animal Functional Anatomy	2				○					
			Laboratory Work in Animal Functional Anatomy	1				○					
			Food Production Management	2				○					
			Practice in Animal Nutrition	1					○				
			Environmental Animal Physiology	2					○				
			Practice of Environmental Physiology	1					○				
			Farm Practice	1					○				
			Animal Welfare	2					○				
			Graduation Thesis	6								○	
			Required subjects: 26 total credits										

			Food Hygiene	2			○				
			Genetic diversity in animals	2				○			
			Developmental Engineering	2				○			
			Feed Science	2				○			
			Animal Physiology and Production	2				○			
			Seminar in Dairy Field Science	2				○			
			Grassland Farming	2				○			
			Animal Pharmacology I	1				○			
			Animal Production System	2					○		
			Food Biochemistry	2					○		
			Farm Animal Management	2					○		
			Animal Pharmacology II	1					○		
			Animal Pharmacology III	1					○		
			Laboratory Animal Science	2					○		
			Training for Animal Food Processing	1						○	
			Elective or required subjects: 16 credits are required from a total of 26 credits. (Credits obtained beyond the 16 credits shall be regarded as credits obtained in elective subjects)								
			Environmental Soil Science	2			○				
			Physiology of Crop Production	2						○	
			System of Regional Agriculture	2							○

			<p>Elective subjects: At least 14 credits must be obtained.</p> <ul style="list-style-type: none"> <li>• Students are required to take subjects from elective subjects of the Program appearing in the Table.</li> <li>• Specialized subjects from other Applied Biological Science programs outside the table can be included in the elective subjects.</li> <li>• 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.</li> <li>• Credits obtained from Liberal Arts Education Subjects and subjects related to the teaching profession cannot be included in the credits required for graduation.</li> </ul>
	合 計	124	

[No. of credits required for graduation]

124 credits (Liberal Arts Education Subjects: 44 credits + Basic Specialized Subjects: 24 credits + Specialized Subjects: 56 credits)

## Academic achievements of Integrated Ecoscience Program

### Relationships between the evaluation items and evaluation criteria

Academic achievements			Evaluation criteria		
Evaluation items			Excellent	Very Good	Good
Knowledge and Understanding	(1)	To have knowledge for considering academically and comprehensively in order to learn a specialty. Also, to understand the knowledge.	To be able to advanced explanations on academic and comprehensive knowledge of biosphere environment studies by linking them with other items.	To be able to explanations on academic and comprehensive knowledge of biosphere environment studies by linking them with other items.	To be able to basic explanations on academic and comprehensive knowledge of biosphere environment studies.
	(2)	To have basic knowledge required for learning a specialty. Also, to understand the knowledge.	To be able to give advanced explanations concerning basic knowledge of biosphere environmental studies by linking them with other items.	To be able to give explanations concerning basic knowledge of biosphere environmental studies by linking them with other items.	To be able to give basic explanations concerning basic knowledge of biosphere environmental studies by linking them with other items.
	(3)	To be able to comprehensively understand on life activities in biosphere and human utilization of them, with consideration of life phenomena and material circulation.	To be able to give advanced explanations on life activities in biosphere and human utilization of them, by linking the items with other relevant items.	To be able to give explanations on life activities in biosphere and human utilization of them, by linking the items with other relevant items.	To be able to give basic explanations on life activities in biosphere and human utilization of them.
	(4)	Being able to understand about plant production of continental areas and suporting soil structure and function	Being able to apply and give a explanation of plan production of continental areas and suporting soil structure and function relating to other items	Being able to give a explanation of plan production of continental areas and suporting soil structure and function relating to other items	Being able to give a basic explanation of plan production of continental areas and suporting soil structure and function
	(5)	To be able to explain biological production in hydrosphere and its eco-field structures.	To be able to give an advanced explanation on ecological system and biological production in hydrosphere, by linking these items with other items.	To be able to give an explanation on ecological system and biological production in hydrosphere, by linking these items with other items.	To be able to give a basic explanation on ecological system and biological production in hydrosphere.



Academic achievements			Evaluation criteria		
Evaluation items			Excellent	Very Good	Good
	(6)	To be able to understand human's food production activities and social system.	To be able to give an advanced explanation on human's food production activities and social system, by linking these items with other items.	To be able to give an explanation on human's food production activities and social system, by linking these items with other items.	To be able to give a basic explanation on human's food production activities and social system.

Academic achievements			Evaluation criteria		
Evaluation items			Excellent	Very Good	Good
Abilities and Skills	(1)	To acquire basic experimental ability and skills needed to learn a specialty.	Being able to fully use basic experiment ability and skills.	Being able to use basic experiment ability and skills.	Being able to partially use basic experiment ability and skills.
	(2)	To acquire basic communication, information processing, and physical abilities and skills, which are required for learning a specialty.	Being able to fully use ability and skills of basic communication ・information processing ・physical activity.	Being able to use ability and skills of basic communication ・information processing ・physical activity.	Being able to partially use ability and skills of basic communication ・information processing ・physical activity.
	(3)	Acquiring concrete approach skills or ways for a plan production field of continental areas	Being able to sufficiently utilize concrete approach skills or ways for a plan production field of continental areas	Being able to utilize concrete approach skills or ways for a plan production field of continental areas	Being able to generally utilize concrete approach skills or ways for a plan production field of continental areas
	(4)	To acquire specific skills and methods to approach biological production and eco-field in hydrosphere.	To be able to sufficiently utilize specific skills and methods to approach biological production and eco-field in hydrosphere.	To be able to utilize specific approach and methods concerning biological production and eco-field in hydrosphere.	To be able to give a rough explanation on ecological system and biological production in hydrosphere, by linking these items with other items.
	(5)	To acquire a certain approach to apply the human's food production activities and social system to the field and communication skills relating to presentation and responding.	To be able to sufficiently utilize a certain approach for human's food production activities and social system and communication ability.	To be able to utilize a certain approach for human's food production activities and social system and communication ability.	To be able to utilize a certain approach for human's food production activities and social system and communication ability.
	(6)	With regard to biosphere, to be acquire reading and communication abilities, including presentation and question-and-answer skills.	With regard to biosphere, to be able to sufficiently utilize reading and communication abilities, including presentation and question-and-answer skills.	With regard to biosphere, to be able to utilize reading and communication abilities, including presentation and question-and-answer skills.	With regard to biosphere, to be able to roughly utilize reading and communication abilities, including presentation and question-and-answer skills.

Academic achievements			Evaluation criteria		
Evaluation items			Excellent	Very Good	Good
Comprehensive Abilities	(1)	With regard to specific biosphere phenomena, to be able to find targets, summarize opinions, deliver presentations or reports logically, and answer questions.	To be able to adequately utilize abilities and skills concerning the following elements: to set up a target, information processing, summarizing statistical data, logical expression and responsive communication.	To be able to utilize abilities and skills concerning the following elements: to set up a target, information processing, summarizing statistical data, logical expression and responsive communication.	To be able to roughly utilize abilities and skills concerning the following elements: to set up a target, information processing, summarizing statistical data, logical expression and responsive communication.

## Placement of the Liberal Arts Education in the Major Program

The liberal arts education in this Program plays the role of creating an academic foundation for specialized education to enable students to develop a voluntary and independent learning attitude; to cultivate scientific thinking based on their ability to gather information, their analytical capacity, and critical powers; to gain deep insight into the nature of and background to things from a broad perspective; to strengthen their language skills to enable them to live as an international person and to develop their interest in peace; to integrate their extensive knowledge into a body of knowledge truly useful for solving problems; and to develop the ability to look at things from a comprehensive perspective.

### Relationships between the evaluation items and class subjects

Subject Classification	Subject Name	Credits	Type of course registration	Grade	Evaluation items																							Total weighted values of evaluation items in the	
					Knowledge and Understanding												Abilities and Skills										Comprehensive Abilities		
					(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)	(1)												
					Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject	Weighted values of evaluation items in the subject			
Liberal Arts Education	Introductory Seminar for Freshmen	2	Required	1 semester	80	1	20	1																					
Liberal Arts Education	Peace Science Courses	2	Required	1 semester	80	1	20	1																					
Liberal Arts Education	Introduction to University Education	2	Required	1 semester	80	1	20	1																					
Liberal Arts Education	Basic Calculus/Elements of	2	Required	1 semester			100	1																				100	
Liberal Arts Education	Species Biology	2	Required	1 semester			100	1																				100	
Liberal Arts Education	General Chemistry/Basic	2	Required	1 semester			100	1																				100	
Liberal Arts Education	Area Courses	8	Elective/Required	1 semester			100	1																				100	
Liberal Arts Education	Health and Sports Courses	2	Elective/Required	1 semester											100	1												100	
Liberal Arts Education	Foreign Languages	4	Required	1 semester											90	1									10	1		100	
Liberal Arts Education	Foreign Languages	4	Required	2 semester											90	1									10	1		100	
Liberal Arts Education	Foreign Languages	2	Required	3 semester											90	1									10	1		100	
Liberal Arts Education	Foreign Languages	2	Elective/Required	4 semester											90	1									10	1		100	
Liberal Arts Education	Information Literacy	2	Required	1 semester											90	1	10	1										100	
Liberal Arts Education	Experimental Methods and	2	Elective/Required	1 semester			10	1									80	1								10	1	100	
Liberal Arts Education	Experimental Methods and	2	Elective/Required	1 semester			10	1									80	1								10	1	100	
Liberal Arts Education	Experimental Methods and	2	Elective/Required	1 semester			10	1									80	1								10	1	100	
Specialized Education	Introduction to Applied Biological	2	Required	1 semester	10	1	60	1	10	1	10	1														10	1	100	
Specialized Education	Introduction to Microbiology	2	Elective/Required	1 semester			80	1	20	1																		100	
Specialized Education	Organic Chemistry	2	Required	2 semester			80	1	20	1																		100	
Liberal Arts Education	Cell Science	2	Required	2 semester			80	1	20	1																		100	
Specialized Education	Agricultural Production Resources	2	Required	2 semester	10	2	70	1			10	1														10	1	100	
Specialized Education	Physics for Applied Biological Science	2	Required	2 semester			80	1	20	1																		100	
Specialized Education	Ethics of Science and Technology	1	Required	2 semester	10	2	70	1			10	1														10	1	100	
Specialized Education	Seminar in Field Science	1	Elective/Required	2 semester	10	2	60	1			10	1					10	2								10	1	100	
Specialized Education	Introduction to Biochemistry	1	Required	2 semester			80	1	20	1																		100	
Specialized Education	Environmental Sciences for	1	Required	3 semester			80	1			20	1																100	
Specialized Education	Genetics	2	Elective/Required	3 semester			80	1	20	1																		100	
Specialized Education	Introduction to Biological Science of	2	Elective/Required	3 semester	10	2	60	1	10	1	10	1														10	1	100	
Specialized Education	Introduction to Plant Biological Science	2	Elective/Required	3 semester			60	1	10	1	10	1														10	1	100	
Specialized Education	Biological Statistics	2	Elective/Required	3 semester			70	1							20	3	10	3										100	
Specialized Education	Biophysical Chemistry	2	Elective/Required	3 semester			80	1	20	1																		100	
Specialized Education	Basic Molecular Biology	2	Required	3 semester			80	1	20	1																		100	
Specialized Education	Ecology	2	Elective/Required	3 semester			80	1			20	1																100	
Specialized Education	Animal Physiology	2	Elective/Required	3 semester			80	1	20	1																		100	
Specialized Education	Public Hygiene	2	Elective/Required	2 semester	10	3	60	1			20	1														10	1	100	
Specialized Education	Laboratory Work in General Biology I, II	2	Required	3 semester			10	1							80	1										10	1	100	
Specialized Education	Basic Experiments in Chemistry	1	Required	3 semester			10	1							80	1										10	1	100	
Specialized Education	Laboratory Work in General Physics	2	Required	3 semester			10	1							80	1										10	1	100	

Subject Classification	Subject Name	Credits	Type of course registration	Grade	Evaluation items																						Total weighted values of evaluation items in the		
					Knowledge and Understanding												Abilities and Skills											Comprehensive Abilities	
					(1)	(2)		(3)		(4)		(5)	(6)	(1)	(2)		(3)	(4)		(5)	(6)		(1)						
Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject	Weighted values of evaluation items	Weighted values of evaluation items in the subject			
Specialized Education	Animal Breeding and Genetics	2	Required	4semester				80	1	10	1															10	1	100	
Specialized Education	Animal Reproduction	2	Required	4semester				80	1	10	1															10	1	100	
Specialized Education	Animal Nutrition	2	Required	4semester				80	1	10	1															10	1	100	
Specialized Education	Animal Functional Anatomy	2	Required	4semester				80	1	10	1															10	1	100	
Specialized Education	Food Production Management	2	Required	4semester	10	3	10	2			70	1														10	1	100	
Specialized Education	Genetic diversity in animal breeding	2	Elective	5semester				80	1	10	1															10	1	100	
Specialized Education	Developmental Engineering	2	Elective	5semester				80	1	10	1															10	1	100	
Specialized Education	Environmental Animal Physiology	2	Required	5semester				10	1	80	1															10	1	100	
Specialized Education	Animal Welfare	2	Required	5semester	10	3				80	1															10	1	100	
Specialized Education	Feed Science	2	Elective	5semester				10	10	80	1															10	1	100	
Specialized Education	Animal Physiology and Pathology	2	Elective	5semester				20	1	70	1															10	1	100	
Specialized Education	Grassland Farming	2	Elective	5semester	10	1		10	1	70	1															10	1	100	
Specialized Education	Food Biochemistry	2	Elective	6semester				80	1	10	1															10	1	100	
Specialized Education	Farm Animal Management	2	Elective	6semester				10	1	80	1															10	1	100	
Specialized Education	Animal Production Systems	2	Elective	6semester	10	3		10	1	70	1															10	1	100	
Specialized Education	Laboratory Animal Science	2	Elective	6semester	10	1		30	1	50	1															10	1	100	
Specialized Education	Practice for Animal Breeding	1	Required	5semester				10	1								5	3	75	1						10	1	100	
Specialized Education	Laboratory Work in Animal Breeding	1	Required	4semester				10	1								5	3	75	1						10	1	100	
Specialized Education	Laboratory Work in Animal Nutrition	1	Required	4semester				10	1								5	3	75	1						10	1	100	
Specialized Education	Practice in Animal Nutrition	1	Required	4semester				10	1											75	1	5	3			10	1	100	
Specialized Education	Practice of Environmental Animal Physiology	1	Required	5semester				10	1											75	1	5	3			10	1	100	
Specialized Education	Farm Practice	1	Required	5semester						10	1									10	3	70	1			10	1	100	
Specialized Education	Seminar in Dairy Field Science	2	Elective	5semester						10	1									10	3	70	1			10	1	100	
Specialized Education	Reading of foreign literature	2	Required	5semester											30	3								70	1			100	
Specialized Education	Graduation thesis	6	Required	6semester	10	3	5	3							5	3	5	3						10	3	65	10	100	
Specialized Education	Animal Pharmacology I	1	Elective	5semester				20	1	80	1																	100	
Specialized Education	Animal Pharmacology II	1	Elective	6semester				20	1	80	1																	100	
Specialized Education	Animal Pharmacology III	1	Elective	6semester				20	1	80	1																	100	
Specialized Education	Food Hygiene	2	Elective	4semester	10	1	10	1	10	1	70	1																100	
Specialized Education	Training for Animal Food Safety	1	Elective	7semester						80	1			20	1													100	

Curriculum Map of Animal Science Program

Academic achievements		1st grade		2nd grade		3rd grade		4th grade	
Evaluation items		Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester
Knowledge and Understanding	To have knowledge for considering academically and comprehensively in order to learn a specialty. Also, to understand the knowledge.	Introductory Seminar for Freshmen(㊟)	Agricultural Production Resources(㊟)	Introduction to Biological Science of Animal Production and Fishery(㊟)	Food Production Management(㊟)	Public Hygiene(○)	Graduation thesis(㊟)	Graduation thesis(㊟)	Graduation thesis(㊟)
		Peace Science CoursesⅡ(㊟)	Ethics of Science and Technology(㊟)	Introduction to Plant Biological Science(○)	Food Hygiene(○)	Animal Welfare(㊟)	Animal Production System(○)		
		Introduction to University Education(㊟)	Seminar in Field Science(○)			Grassland Farming(○)	Laboratory Animal Science(○)		
		Introduction to Applied Biological Sciences(㊟)							
	To have basic knowledge required for learning a specialty. Also, to understand the knowledge.	Experimental Methods and Laboratory Work in Physics(○)		Environmental Sciences for Bioproduction(㊟)	Food Production Management(㊟)	Public Hygiene(○)	Graduation thesis(㊟)	Graduation thesis(㊟)	Graduation thesis(㊟)
		Experimental Methods and Laboratory Work in Chemistry(○)		Genetics(○)	Food Hygiene(○)				
		Experimental Methods and Laboratory Work in Biology(○)		Introduction to Biological Science of Animal Production and Fishery(㊟)					
		Introductory Seminar for Freshmen(㊟)	Organic Chemistry(㊟)	Introduction to Plant Biological Science(○)					
		Peace Science CoursesⅡ(○)	Cell Science(㊟)	Biological Statistics(○)					
		Basic Calculus·Elements of Calculus(㊟)		Agricultural Production Resources(㊟)	Biophysical Chemistry(○)				
		Species Biology(㊟)	Physics for Applied Biological Science(㊟)	Basic Molecular Biology(㊟)					
		General Chemistry·Fundamental Chemistry(㊟)	Ethics of Science and Technology(㊟)	Ecology(○)					
		Area Courses(○)	Seminar in Field Science(○)	Animal Physiology(㊟)					
		Introduction to Applied Biological Sciences(㊟)	Introduction to Biochemistry(㊟)	Laboratory Work in General Biology I, II(㊟)					
		Introduction to Microbiology(○)		Basic Experiments in Chemistry(㊟)					
				Laboratory Work in General Physics(㊟)					
	To be able to comprehensively understand on life activities in animal production from molecular level to the animal level.	Introduction to Applied Biological Sciences(㊟)	Organic Chemistry(㊟)	Genetics(○)	Animal Breeding and Genetics(㊟)	Genetic Diversity in Animals(○)	Feed Science(○)		
		Introduction to Microbiology(○)	Cell Science(㊟)	Introduction to Biological Science of Animal Production and Fishery(㊟)	Animal Reproduction(㊟)	Developmental Engineering(○)	Farm Animal Management(○)		
			Physics for Applied Biological Science(㊟)	Introduction to Plant Biological Science(○)	Animal Nutrition(㊟)	Environmental Animal Physiology(㊟)	Animal Production System(○)		
			Introduction to Biochemistry(㊟)	Biophysical Chemistry(○)	Animal Functional Anatomy(㊟)	Feed Science(○)	Laboratory Animal Science(○)		
				Basic Molecular Biology(㊟)	Practice for Animal Breeding and Genetics(㊟)	Animal Physiology and Production(○)	Animal Pharmacology I(○)		
				Animal Physiology(㊟)	Laboratory Work in Animal Reproduction(㊟)	Grassland Farming(○)	Animal Pharmacology I(○)		
					Laboratory Work in Animal Functional Anatomy(㊟)	Practice in Animal Nutrition(㊟)			
					Food Hygiene(○)	Practice of Environmental Physiology(㊟)			
						Animal Pharmacology I(○)			
	To be able to comprehensively understand on life activities in animal production from molecular level to the animal level.	Introduction to Applied Biological Sciences(㊟)	Agricultural Production Resources(㊟)	Environmental Sciences for Bioproduction(㊟)	Food Production Management(㊟)	Public Hygiene(○)	Feed Science(○)	Training for Animal Food Processing(○)	
			Ethics of Science and Technology(㊟)	Introduction to Biological Science of Animal Production and Fishery(㊟)	Food Hygiene(○)	Genetic diversity in animals(○)	Farm Animal Management(○)		
			Seminar in Field Science(○)	Introduction to Plant Biological Science(○)	Animal Breeding and Genetics(㊟)	Developmental Engineering(○)	Animal Production System(○)		
				Ecology(○)	Animal Reproduction(㊟)	Environmental Animal Physiology(㊟)	Laboratory Animal Science(○)		
					Animal Nutrition(㊟)	Animal Welfare(㊟)	Animal Pharmacology I(○)		
					Animal Functional Anatomy(㊟)	Feed Science(○)	Animal Pharmacology I(○)		
					Food Hygiene(○)	Animal Physiology and Production(○)			
						Grassland Farming(○)			
						Farm Practice(㊟)			
						Seminar in Dairy Field Science(○)			
						Animal Pharmacology I(○)			



Academic achievements		1st grade		2nd grade		3rd grade		4th grade	
Evaluation items		Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester
Abilities and Skills	To acquire basic communication, information processing, and physical abilities and skills, which are required for learning a specialty.	Health and Sports Courses (○)	Foreign Languages (㊟)	Foreign Languages (㊟)	Foreign Languages (○)	Reading of foregn literature (㊟)	Graduation thesis (㊟)	Graduation thesis (㊟)	Graduation thesis (㊟)
		Foreign Languages (㊟)		Biological Statistics (○)					
		Information Courses (㊟)							
	To acquire basic experimental ability and skills needed to learn a specialty.	Experimental Methods and Laboratory Work in Physics (○)		Biological Statistics (○)	Practice for Animal Breeding and Genetics (㊟)		Graduation thesis (㊟)	Graduation thesis (㊟)	Graduation thesis (㊟)
		Experimental Methods and Laboratory Work in Chemistry (○)		Laboratory Work in General Biology I, II (㊟)	Laboratory Work in Animal Reproduction (㊟)			Training for Animal Food Processing (○)	
		Experimental Methods and Laboratory Work in Biology (○)		Laboratory Work in General Chemistry (㊟)	Laboratory Work in Animal Functional Anatomy (㊟)				
		Information Courses (㊟)	Seminar in Field Science (○)	Laboratory Work in General Physics (㊟)					
	Acquiring biological basical analysis and assessment about animal productive function from molecular to animal level				Practice for Animal Breeding and Genetics (㊟)				
					Laboratory Work in Animal Reproduction (㊟)				
					Laboratory Work in Animal Functional Anatomy (㊟)				
	To acquire basical skills and methods to approach animal handling and experiments.					Practice in Animal Nutrition (㊟)			
						Practice of Environmental Physiology (㊟)			
						Farm Practice (㊟)			
						Seminar in Dairy Field Science (○)			
	To acquire a skills for assessment of management environment in animal production system					Practice in Animal Nutrition (㊟)			
						Practice of Environmental Physiology (㊟)			
						Farm Practice (㊟)			
						Seminar in Dairy Field Science (○)			
	With regard to animal science, to be acquire reading and communication abilities, including presentation and question-and-answer skills in english.	Foreign Languages (㊟)	Foreign Languages (㊟)	Foreign Languages (㊟)	Foreign Languages (○)	Reading of Foreign Literature (㊟)	Graduation thesis (㊟)	Graduation thesis (㊟)	Graduation thesis (㊟)
	Comprehensive Abilities	With regard to specific animal science, to be able to find targets, summarize opinions, deliver presentations or reports logically, and answer questions.	Experimental Methods and Laboratory Work in Physics (○)		Introduction to Biological Science of Animal Production and Fishery (○)	Animal Breeding and Genetics (㊟)	Public Hygiene (○)	Graduation thesis (㊟)	Graduation thesis (㊟)
Experimental Methods and Laboratory Work in Chemistry (○)			Introduction to Plant Biological Science (○)	Animal Reproduction (㊟)	Genetic diversity in animals (○)	Feed Science (○)			
Experimental Methods and Laboratory Work in Biology (○)			Laboratory Work in General Biology I, II (㊟)	Animal Nutrition (㊟)	Developmental Engineering (○)	Farm Animal Management (○)			
Introductory Seminar for Freshmen (㊟)			Agricultural Production Resources (㊟)	Laboratory Work in General Chemistry (㊟)	Animal Functional Anatomy (㊟)	Environmental Animal Physiology (㊟)	Animal Production System (○)		
Peace Science Courses (○)			Ethics of Science and Technology (㊟)	Laboratory Work in General Physics (㊟)	Food Production Management (㊟)	Animal Welfare (㊟)	Laboratory Animal Science (○)		
Introduction to Applied Biological Sciences (㊟)			Seminar in Field Science (○)		Practice for Animal Breeding and Genetics (㊟)	Feed Science (○)			
					Laboratory Work in Animal Reproduction (㊟)	Animal Physiology and Production (○)			
					Laboratory Work in Animal Functional Anatomy (㊟)	Grassland Farming			
						Practice in Animal Nutrition (㊟)			
						Practice of Environmental Physiology (㊟)			
						Farm Practice (㊟)			
						Seminar in Dairy Field Science (○)			
			Liberal Arts Education Subjects	Basic Specialized Subjects	Specialized Education Subjects	Graduation Thesis	(㊟)Required	(○)Elective/required	(△)Free elective