

## Educational purpose

We foster graduates with the skills and outlook required to become future global leaders, and a strong capacity to discover and solve problems. Students develop a comprehensive understanding of biological phenomena of various organisms including humans, the evolution of the earth and dynamics of the environment, and methods of conservation and sustainable use of biological resources.

# College of Agro-Biological Resource Sciences

■ Bachelor of Bioresource Science

■ Bachelor of Agricultural Science

## Educational purpose

In the College of Agro-Biological Resource Sciences, we foster personnel who can contribute to a stable food supply as well as sustainable development and conservation-based use of biological resources in harmony with the environment from a regional and global viewpoint through comprehensive learning related to biological resources that are a foundation for human existence and for safe and enriched lives.

## Desired students

Personnel with strong interest in biological resources, agriculture, forestry, and environmental conservation are desired. They should also have flexible ways of thinking that allow them to conduct extensive studies, be motivated to identify their own problems, work to resolve the same, convey information on the same internally and externally, and offer logical explanations.

## Measures to ensure and improve the quality of education

Class liaison committee meetings are held every semester with participation of class advisors for the first and second years, course instructors, Faculty Development (FD) Committee members of the College and class representatives to implement continuous curriculum improvements.

Student class evaluations are conducted for each course, and the results are reported to the instructor of the course, so that teaching contents and methods can be improved.

Our FD activities include class observation by other faculty members, sharing of class materials, strengthened cooperation among courses, study sessions, and meetings for class improvement.

We offer course information sessions for first- and second-year students and laboratory information sessions for third-year students to support smooth progression into the course in the third year and graduation research in the fourth year.

The course requirements for promotion to the third year course and the start of the graduation research in the fourth year are set, and promotion and graduation are approved based on strict grading.

### Evaluation and improvement systems for courses and curriculum

Topic	Students	Faculty members	College of Agro-Biological Resource Sciences
Curriculum	Collect opinions on the curriculum	Review the curriculum	
	Class liaison committees		
Classes	Submit the class evaluation questionnaires	Review the teaching content and methods	Organize and disclose (within the university) class evaluation results and instructor responses
	Conduct classes		
Decision on the course and laboratory	Decide the course and laboratory and taking related courses	Brief on research details, course-taking guidance	Set requirements for course promotion and graduation research
	Course briefing session, laboratory briefing session		

# Bachelor of Bioresource Science

## Diploma Policy

We grant diplomas for Bachelor of Bioresource Science to persons who have acquired knowledge and abilities (that is, Generic Competences), based on the educational purpose for undergraduate students at the University of Tsukuba, who have achieved the following goals based on the educational purpose of our school and college.

Students have acquired a wide-range knowledge that allows them to substantially understand relationship between the natural environment and human society.

(Relevant competences: Systematic expertise on Bioresource Science, Refinement representing Foundation of Major on Bioresource Science)

Students have acquired systematic specialized knowledge related to the use of diverse biological resources, abilities to utilize such knowledge, and abilities for further highly advanced specialized pursuits in graduate schools.

(Relevant competences: Systematic expertise on Bioresource Science, International expertise on Bioresource Science, Ability to utilize ICT on Bioresource Science, Ability to cultivate a critical mind on Bioresources)

Students have gained abilities and communication competency for understanding different cultures necessary for overseas cooperation in the field of development and the use of biological resources.

(Relevant competences: Systematic expertise on Bioresource Science, International expertise on Bioresource Science)

Students are able to analyze information and knowledge related to the utilization of biological resources through making use of Information and Communication Technology (ICT) and to receive and dispatch information internally and externally.

(Relevant competences: Systematic expertise on Bioresource Science, Refinement representing Foundation of Major on Bioresource Science, Ability to utilize ICT on Bioresource Science)

Students are motivated to contribute to the development of agriculture and forestry as well as food and environmental problems and have acquired the power to continue their growth even after graduation.

(Relevant competences: Systematic expertise on Bioresource Science, Ability to cultivate a critical mind on Bioresources)

## Curriculum policy

We organize and implement curricula based on the following policies for programs that allow students to acquire learning outcomes related to Bachelor of Bioresource Science.

### General policy

We offer the following four courses: Biological Sciences for Agriculture and Forestry, Advanced Life Sciences, Environmental Engineering, and Agriculture and Forestry Social Sciences as major courses in Agrobiological Sciences. During the first half of the curriculum, students study broad subjects in classes that are not classified as part of a specialized field, and common Major Subjects that constitute a foundation for the Bioresource Sciences. During the second half of the curriculum, students take specialized courses, obtain specialized course knowledge and cross-sectional understanding, organize such knowledge, and work on their graduation theses. In this way, students deepen their specialties.

### Course sequence policy

During the first year, students build foundational knowledge as experts with extensive abilities through General Foundation Subjects and Foundation Subjects for their Major. In particular, students will cultivate an interest in a wide range of fields in bioresource science, as well as cultivate problem-solving awareness through deepening their understanding of bioresource science by studying mandatory subjects in the college.

During the second year, students acquire competency with methods for deepening specialties through learning basic Major Subjects. Students mainly take course subjects to be selected during the third year, but expand interdisciplinary views by taking Major Subjects I, a cross-sectional field subject.

During the third year, students choose a single course from the four, and deepen their specialties through Major Subjects II of the selected course. Students concentrate on subjects of the course to which they belong, but also gain knowledge in

associated fields through Major Subjects that which are cross-sectional field subjects.

During the fourth year, students continue studying Major Subjects II. Simultaneously, we implement a mandatory Graduation Thesis. By comprehensively applying specialized knowledge and methods learned thus far to a single research assignment, students are able to more deeply understand Bioresource Sciences.

#### Implementation policy

During the first year, students gain basic knowledge about bioresource science through Development and Production of Biological Resources and Sustainable Use, Genes and Genomes as Biological Resources, Biological Resources and the Environment, Forefront of Food Science and Technology in Agro-Biological Resource Sciences, and Agro-Biological Resource Science, Exercises. After that, students study Major Subjects.

In the four courses, students deepen specialties by systematically studying Major Subjects. At the

same time, students can foster abilities for identifying and solving problems through learning experiments, practical training sessions, and seminars.

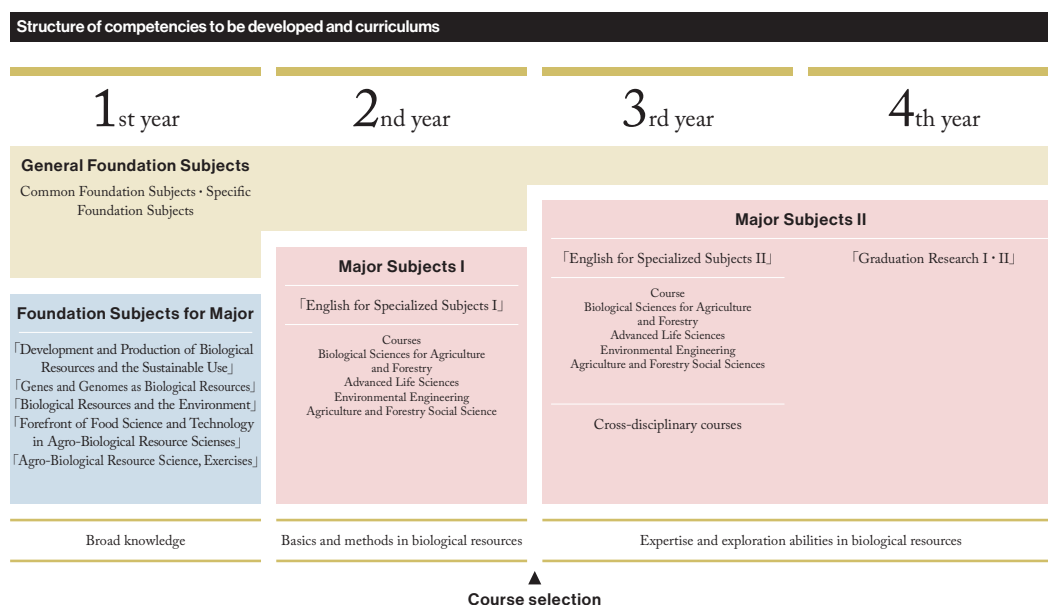
Students can deepen interdisciplinary views by learning cross-sectional subjects. The keywords here are food, environment, and internationalism.

#### Policy for evaluation of learning outcomes

Faculty members strictly evaluate grades according to the methods described in syllabuses. Moreover, understanding and confirming competences obtained by students are of use for guidance in choosing courses, graduation theses, and career paths.

#### Characteristics

Students can enhance their internationalism and motivation to contribute to society through hands-on experience at overseas partner universities, the International Internship Courses (training at the JICA Tsukuba Center, etc.), and the Internship on Food and Environment Course (activities at local companies and organizations).



# Bachelor of Agricultural Science

## Diploma Policy

We grant diplomas for Bachelor of Agricultural Science to persons who have acquired knowledge and abilities (that is, Generic Competences) based on the educational purpose for undergraduate students at the University of Tsukuba, who have achieved the following goals based on the educational purpose of our school and college.

Students have acquired a wide-range knowledge that allows them to substantially understand relationship between the natural environment and human society.

(Relevant competences: Systematic expertise on Agricultural Science, Refinement representing Foundation of Major on Agricultural Science)

Students have acquired systematic specialized knowledge related to the use of diverse biological resources, abilities to utilize such knowledge, and abilities for further highly advanced specialized pursuits in graduate schools.

(Relevant competences: Systematic expertise on Agricultural Science, International expertise on Agricultural Science, Ability to utilize ICT on Agricultural Science, Ability to cultivate a critical mind on Agriculture)

Students have gained abilities and communication competency for understanding different cultures necessary for overseas cooperation in the field of development and the use of biological resources.

(Relevant competences: Systematic expertise on Agricultural Science, International expertise on Agricultural Science)

Students are able to analyze information and knowledge related to the utilization of biological resources through making use of Information and Communication Technology (ICT) and to receive and dispatch information internally and externally.

(Relevant competences: Systematic expertise on Agricultural Science, Refinement representing Foundation of Major on Agricultural Science, Ability to utilize ICT on Agricultural Science)

Students are motivated to contribute to the development of agriculture and forestry as well as food and environmental problems and have acquired the power to continue their growth even after graduation.

(Relevant competences: Systematic expertise on Agricultural Science, Ability to cultivate a critical mind on Agriculture)

Students have acquired the basic knowledge and skills necessary to work as experts in Agricultural Sciences in Japan.

(Relevant competences: Systematic expertise on Agricultural Science, Ability to cultivate a critical mind on Agriculture)

## Curriculum policy

We organize and implement curricula based on the following policies for programs that allow students to acquire learning outcomes related to Bachelor of Agricultural Science.

### General policy

In the first half of the curriculum, students acquire knowledge on a wide range of liberal arts courses and study courses for a specialized field that form the basis for agricultural science. In the second half of the curriculum, students study specialized and cross-disciplinary courses, participate in internship programs, and improve their expertise by compiling the knowledge in graduation research.

### Course sequence policy

During the first year, students build foundational knowledge as experts with a wide range of abilities by not only acquiring and improving Japanese language proficiency but also taking General Foundation Subjects and Foundation Subjects for Major subjects. In particular, students will cultivate an interest in a wide range of fields in agricultural science, as well as cultivate problem-solving awareness through deepening their understanding of agricultural science by studying mandatory subjects in the college.

During the second year, students acquire competency with methods for deepening specialties through learning basic Major Subjects. At the same time, students expand interdisciplinary views by taking Major Subjects I, a cross-sectional field subject.

During the third year, students deepen their specialties through Major Subjects II. Students concentrate on subjects of the course to which they belong. At the same time, they gain knowledge in associated fields through Major Subjects, cross-sectional field subjects.

During the fourth year, students continue studying Major Subjects II. Simultaneously, we implement the mandatory Graduation Thesis. By comprehensively applying specialized knowledge

■ In the third or fourth year, students obtain a practical experience about Agricultural Sciences by internship.

During the first year, students will acquire and improve Japanese language proficiency by taking Japanese language subjects in the Japan-Expert program. In addition, students take Major subjects after learning the foundation of agricultural science by taking Development and Production of Biological Resources and Sustainable Use, Genes and Genomes as Biological Resources, Biological Resources and the Environment, Forefront of Food Science and Technology in Agro-biological Resource Sciences, Agro-Biological Resource Science, Exercises, and Foundation Subjects for Major in the second year.

through learning experiments, practical training sessions, and seminars.

Students can obtain a practical experience about agricultural science by Japan-Expert Internship I or II.

Faculty members strictly evaluate grades according to the methods described in syllabuses. Moreover, understanding and confirming competences obtained by students are of use for guidance in choosing courses, graduation theses, and career paths.

Students can enhance their internationalism and motivation to contribute to society through hands-on experience at overseas partner universities, the International Internship Courses (training at the JICA Tsukuba Center, etc.), and the Internship on Food and Environment Course (activities at local companies and organizations).