

**2017 Course List and Graduation Requirements for International Programs,  
Biological Science Program – School of Agricultural Sciences (for Undergraduate)**

Course Category	Course	* Notes (offered Academic Year)	Term	Credits							
				No of Credits	Compulsory	Compulsory Elective	Elective	Minimum Requirement			
Liberal Arts and Sciences Courses	Basic General Education Courses	First Year Seminar	First Year Seminar A	I	2	2			2		
		Language and Culture	Japanese/Languages except English	I, II	12	12			12		
			Academic English Advanced I	I	2	2			2		
		Health and Sports Science	Health and Sports Science: Lecture	I	2	2			2		
			Health and Sports Science: Practicum I	II	1	1			2		
		Health and Sports Science: Practicum II	III	1	1			2			
		Partial Sum				20			20		
		*2 Basic Courses in Humanities and Social Sciences	History	*1	II	2			2	6	
			Literature	*1	I	2			2		
			Comparative Studies of Cultures	*1 AY2018	I	2			2		
		*2 Liberal Education Courses in Humanities and Social Sciences	Introduction to Cultural Studies	*1	II	2			2		
			Culture and Representation	*1	II	2			2		
			Past and Present of Democracy	*1 AY2018	I	2			2		
			International Society of Globalization Age	*1	I	2			2		
		Liberal Education Courses in Natural Sciences	Biotechnology		I	2			2	4	
			Modern Biology		II	2			2		
			Science of Materials		III	2			2		
		*2 Liberal Education Courses in Interdisciplinary Fields	Exploration of Japan: From the Outside Looking Inside		II	2			2		
			Introduction to Career Development Theory		I	2			2		
			Preparedness for Imminent Natural Disasters		III	2			2		
			Thinking about Japanese Society in the 21st Century from Gender Perspectives		I	2			2		
			Special Lecture (Studium Generale)		I · II	2			2		
		Basic Courses in Natural Sciences	Calculus I		I	2			2	18  including a total of at least 1.5 credits in Laboratory courses	
			Calculus II		II	2			2		
			Linear Algebra I		I	2			2		
			Linear Algebra II		II	2			2		
			Complex Analysis		III	2			2		
			Fundamentals of Physics I		I	2			2		
			Fundamentals of Physics II		I	2			2		
			Fundamentals of Physics III		II	2			2		
			Fundamentals of Physics IV		II	2			2		
			Fundamentals of Chemistry I		I	2			2		
			Fundamentals of Chemistry II		II	2			2		
			Fundamentals of Biology I		I	2			2		
			Fundamentals of Biology II		II	2			2		
			Fundamentals of Earth Science I		I	2			2		
			Fundamentals of Earth Science II		II	2			2		
			Laboratory in Physics		III	1.5			1.5		
			Laboratory in Chemistry		II	1.5			1.5		
		Laboratory in Biology		II	1.5			1.5			
		Sum for Liberal Arts and Sciences Courses					18	0	30	48	
	Courses in Specialized Fields	Compulsory Courses ①	Biochemistry I		III	2	2			8	
			Cell Biology I		III	2	2				
			Biochemistry II		IV	2	2				
			Cell Biology II		IV	2	2				
		Basic Specialized Courses	Compulsory Elective Courses ②④	Mathematics Tutorial Ia		I	1		1		8
				Mathematics Tutorial Ib		I	1		1		
Fundamental Physics Tutorial Ia					I	1		1			
Fundamental Physics Tutorial Ib					I	1		1			
Mathematics Tutorial IIa					II	1		1			
Mathematics Tutorial IIb					II	1		1			
Fundamental Physics Tutorial IIa					II	1		1			
Fundamental Physics Tutorial IIb					II	1		1			
Analytical Chemistry					III	2		2			
Organic Chemistry I					III	2		2			
Analytical Mechanics I					III	2		2			
Physical Chemistry I					III	2		2			
Mathematical Physics I					III	2		2			
Mathematical Physics Tutorial I					III	2		2			
Statistical Physics I					III	2		2			
Quantum Mechanics I					IV	2		2			
Inorganic Chemistry I					IV	2		2			
Electricity and Magnetism			IV	2		2					
Earth and Planetary Sciences			V	2		2					
Environmental Earth Sciences			VI	2		2					
Specialized Course		Compulsory Courses ③	Genetics I		III	2	2			42	
			Physiology and Developmental Biology		III	2	2				
			Genetics II		IV	2	2				
			Biochemistry III		V	2	2				
			Cell Biology III		V	2	2				
			Bioagricultural Science Laboratory		IV·V	10	10				
			Introductory Seminar on the Major		VII	2	2				
		Graduation Research in Bioscience		VII·VIII	20	20					
		Compulsory Elective Courses ④	Agricultural Science		III	2		2		30	
			Physiology and Anatomy I		IV	2		2			
			Organic Chemistry II		IV	2		2			
			Biophysics		IV	2		2			
			Plant Physiology		V	2		2			
Genetics III				V	2		2				
Chemical Physics			V	2		2					
Computational Chemistry			V	2		2					
Bioorganic Chemistry			VI	2		2					
Advanced Bioagricultural Science Laboratory			VI	10		10					
Microbiology		VI	2		2						
Physiology and Anatomy II		VI	2		2						
Biochemistry IV		VI	2		2						
Cell Biology IV		VI	2		2						
Current Organic and Polymer Chemistry		VI	2		2						
Sum for Courses in Specialized Fields					50	38	0	88			
<b>Total Sum</b>					<b>68</b>	<b>38</b>	<b>30</b>	<b>136</b>			

(Important) Please confirm the prerequisite for each subject with the syllabus.

\*1 Some of the courses on this column are offered in every other year. Please confirm the offering term with the "Liberal Arts and Sciences Class Timetable-Table B" of the said year.

Please refer to the detail of the Term on the page 1 of 'Student Handbook'.

\*2 Offering term of the courses in this column may be subject to change.

**Graduation Requirements for International Programs,  
Biological Science Program – School of Agricultural Sciences (for Undergraduate)**

- 1. Liberal Arts and Sciences Courses: A combined total of at least 48 credits must be acquired.**
- (1) Basic General Education Courses: A total of at least 20 credits must be acquired, consisting of 2 credits from first year seminar A, 12 credits from Japanese/ Languages except English, 2 credits from Academic English Advanced I, 2 credits of Health and Sports Science: Lecture, and at least 2 credits from Health and Sports Science: Pract courses.
- (2) Basic Courses in Humanities and Social Sciences, Liberal Education Courses in Natural Sciences, Liberal Education Courses in Humanities and Social Sciences, and Liberal Education Courses in Interdisciplinary Fields: A total of at least 10 course credits must be acquired from these four Course Categories.
- (3) Basic Courses in Natural Sciences: A total of at least 18 credits must be acquired from these courses, including at least 1.5 course credits from the three Laboratory Courses.
- 2. Courses in Specialized Fields: A combined total of at least 88 course credits must be acquired from these course categories.**
- (1) Compulsory Courses: A total of 42 course credits must be acquired from Compulsory Specialized Courses<sup>③</sup>, and a total of 8 course credits must be acquired from Compulsory Basic Specialized Courses <sup>①</sup>.
- (2) Compulsory Elective Courses: A total of at least 8 course credits must be acquired from Compulsory Elective Basic Specialized Courses <sup>②</sup> and a total of at least 30 course credits must be acquired from Compulsory Elective Specialized Courses <sup>④</sup>.

**Requirements for Advancement for International Programs,  
Biological Science Program - School of Agricultural Sciences (for Undergraduate)**

Time the Judgment is made	Course Categories and Number of Credits Required	What the students who fail to advance have to obey
At the End of the Second Grade	A total of a minimum of 70 credits must be acquired by the end of the second year. However, 42 or more Liberal Arts and Sciences course credits are included among the 70 credits.	(1) Students must remain in the second year. (2) The maximum duration of enrollment up to the second year is 6 years. (Equals to the maximum duration of enrollment (8 years) minus the enrollment duration for the third and fourth years (two years)) However, the total duration of leaves of absence will not be counted for calculating the enrollment period. (3) Students who fail to advance to the third year after years of study mentioned above (2) will be expelled from school.
At the End of the Third Grade	A total of a minimum of 110 credits must be acquired by the end of the third year. Further, the courses of 110 credits must include a total of a minimum of 14 credits of Courses of Language and Culture as well as 16 credits of Basic Specialized Courses and 10 credits of Bioagricultural Science Laboratory.	(1) Students who fail to advance will remain in the third year. (2) The maximum duration of enrollment up to the third year is 7 years. (Equals to the maximum duration of enrollment (8 years) minus the enrollment duration for the fourth years (one year)) However, the total duration of leaves of absence will not be counted for calculating the enrollment period. (3) Students who fail to advance to the fourth year after 7 years of study will be expelled from school.

Note: The 110 credits outlined here were totaled, from credits earned for advancement to the next year, with the maximum number of required credits by course category for the graduation credit requirements. Credits exceeding this amount will not be counted towards the required 110 credits.