

**2016 Course List and Graduation Requirements for Undergraduate
Biological Science (School of Agricultural Sciences) Program**

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		I	2	2			2	
		Japanese/Second Foreign Language		I, II	12	12			12	
		Language and Culture			I	2	2		2	
		Academic English Advanced I			I	2	2		2	
		Health and Sports Science			I	2	2		2	
		Health and Sports Science: Lecture			II	1	1		2	
	Health and Sports Science: Practicum I			III	1	1		2		
	Health and Sports Science: Practicum II									
	Partial Sum					20			20	
	*2 Basic Courses in Humanities and Social Sciences	Literature	*1		II	2			2	
		Comparative Studies of Cultures	AY 2016		I	2			2	
		History	*1		II	2			2	
		International Society of Globalization Age	*1		I	2			2	
		Past and Present of Democracy	AY 2016		I	2			2	
		Introduction to Cultural Studies	*1		II	2			2	
	*2 Liberal Education Courses in Humanities and Social Sciences	Culture and Representation	*1		II	2			2	
		Biotechnology			I	2			2	
		Modern Biology			II	2			2	
Science of Materials				III	2			2		
Exploration of Japan: From the Outside Looking Inside				II	2			2		
Introduction to Career Development Theory				I	2			2		
Liberal Education Courses in Natural Sciences	Special Lecture (Studium Generale)			I · II	2			2		
	Preparedness for Imminent Natural Disasters			III	2			2		
	Calculus I			I	2			2		
	Calculus II			II	2			2		
	Linear Algebra I			I	2			2		
	Linear Algebra II			II	2			2		
Basic Courses in Natural Sciences	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				
Mathematics Tutorial Ia				I	1		1			
Compulsory Elective Courses ②④		Mathematics Tutorial Ib		I	1		1			
		Fundamental Physics Tutorial Ia		I	1		1			
		Fundamental Physics Tutorial Ib		I	1		1			
		Mathematics Tutorial Ia		II	1		1			
		Mathematics Tutorial Ib		II	1		1			
		Fundamental Physics Tutorial Ia		II	1		1			
		Fundamental Physics Tutorial Ib		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				
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		
		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		
Total Sum					68	38	30	136		

*1 Check the "Liberal Arts and Sciences Class Timetable-Table B" every semester to find the offering term of the courses in this column.

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 G30 Undergraduate
Biological Science (School of Agricultural Sciences) Program**

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/Second Foreign Language, 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: Practicum 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^③, and a total of 8 course credits must be acquired from Compulsory Basic Specialized Courses ^①.
- (2) Compulsory Elective Courses: A total of at least 8 course credits must be acquired from Compulsory Elective Basic Specialized Courses ^② and a total of at least 30 course credits must be acquired from Compulsory Elective Specialized Courses ^④.

**Requirements for Advancement for G30 Undergraduate
Biological Science (School of Agricultural Sciences) Program**

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.	<ul style="list-style-type: none"> (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.	<ul style="list-style-type: none"> (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.