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

Course Category☐			Course	＊Notes (offerd 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
		Health and Sports Science	Health and Sports Science: Lecture		I	2	2			4
			Health and Sports Science: Practicum I		II	1	1			
			Health and Sports Science: Practicum II		III	1	1			
		Partial Sum					18			18
	＊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	consisting of 2 credits from LECNS. see 14page 1(3)
			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	15
			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	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	26.5	44.5
Courses in Specialized Fields	Basic Specialized Courses	Compulsory Elective Courses ①	Genetics I		III	2		2		22
			Biochemistry I		III	2		2		
			Cell Biology I		III	2		2		
			Physiology and Developmental Biology		III	2		2		
			Analytical Chemistry		III	2		2		
			Organic Chemistry I		III	2		2		
			Physical Chemistry I		III	2		2		
			Genetics II		IV	2		2		
			Biochemistry II		IV	2		2		
			Cell Biology II		IV	2		2		
			Physiology and Anatomy I		IV	2		2		
			Inorganic Chemistry I		IV	2		2		
		Elective Courses ②	Fundamental Physics Tutorial Ia		I	1			1	4
			Fundamental Physics Tutorial Ib		I	1			1	
			Mathematics Tutorial Ia		I	1			1	
			Mathematics Tutorial Ib		I	1			1	
			Fundamental Physics Tutorial II a		II	1			1	
			Fundamental Physics Tutorial II b		II	1			1	
			Mathematics Tutorial IIa		II	1			1	
			Mathematics Tutorial IIb		II	1			1	
			Analytical Mechanics I		III	2			2	
			Mathematical Physics I		III	2			2	
			Mathematical Physics Tutorial I		III	1			1	
			Statistical Physics I (Thermodynamics)		III	2			2	
			Quantum Mechanics I		IV	2			2	
			Electricity and Magnetism		IV	2			2	
			Earth and Planetary Sciences		V	2			2	
			Environmental Earth Sciences		VI	2			2	
		Partial Sum					0	22	4	26
	Specialized Courses	Compulsory Courses ③	Bioscience Laboratory		IV, V	16	16			42
			Advanced Bioscience Laboratory I		VI	2	2			
			Advanced Bioscience Laboratory II		VI	2	2			
			Advanced Bioscience Laboratory III		VI	2	2			
			Graduation Research in Bioscience		VII, VIII	20	20			
		Elective Courses ④	Agricultural Science		III	2			2	20
			Organic Chemistry II		IV	2			2	
			Biophysics		IV	2			2	
			Physiology and Anatomy II		VI	2			2	
			Biochemistry IV		VI	2			2	
			Cell Biology IV		VI	2			2	
			Microbiology		VI	2			2	
			Bioorganic Chemistry		VI	2			2	
			Current Organic and Polymer Chemistry		VI	2			2	
			Advanced Bioscience Laboratory IV		VI	2			2	
			Advanced Bioscience Laboratory V		VI	2			2	
			Summer Course in Marine Biology		VI	2			2	
			Genetics III		V	2			2	
			Biochemistry III		V	2			2	
			Cell Biology III		V	2			2	
			Plant Physiology		V	2			2	
			Computational Chemistry		V	2			2	
			Chemical Physics		V	2			2	
			Organic Chemistry III		V	2			2	
			Organic Chemistry IV		VI	2			2	
		Partial Sum					42	0	20	62
	Sum for Courses in Specialized Fields						42	22	24	88
Total Sum							**60**	**22**	**50.5**	**132.5**

(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 Science (for Undergraduate)

1. Liberal Arts and Sciences Courses: A combined total of at least 44.5credits must be acquired.
(1) Basic General Education Courses:
A total of at least 18 credits must be acquired, consisting of 2 credits from first year seminar A, 12 credits from Japanese/Second Foreign Language, 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 and Liberal Education Courses in Humanities and Social Sciences:
A total of at least 6 elective course credits must be acquired from the two Course Categories.
(3) Liberal Education Courses in Natural Sciences and Liberal Education Courses in Interdisciplinary Fields:
A total of at least 4 elective course credits must be acquired from these two Course Categories, consisting of 2credits from Liberal Education Courses in Natural Sciences.
(4) Basic Courses in Natural Sciences:
A total of at least 16.5 credits must be acquired, consisting of at least 15 course credits from Basic Courses in Natural Sciences except three Laboratory Courses and 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.
(2) Compulsory Elective Courses: A total of at least 22 course credits must be acquired from Compulsory Elective Basic Specialized Courses ①.
(3) Elective courses: A total of at least 24 course credits must be acquired from Elective Courses ② and ④, consisting of a total of at least 20 credits from Specialized Courses ④ and a total of at least 4 course credits from Related Elective Basic Specialized Courses ②.

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

Time the Judgment is made	Course Categories and Number of Credits Required	What treatments the students have to obey
At the End of the First Grade	A total of a minimum of 20 course credits must be acquired at the end of the first grade.	1. Students who fail to advance will remain in the first grade. 2. The total period of enrollment in the first grade may not exceed 5 years (which equals to the maximum duration of enrollment (8years) minus the duration of enrollment from the second to the fourth year). 3. Student who don't advance to the second grade after 5 years of study will be expelled from the school.