

**Course List and Graduation Requirements for International Programs,
Biological Science Program – School of Science (for Undergraduates Enrolled in October 2018)**

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
		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	AY2020	TBD	2			2	6
			Literature	*1		II	2			2	
			Comparative Studies of Cultures	*1		I	2			2	
	*2 Liberal Education Courses in Humanities and Social Sciences		Introduction to Cultural Studies	*1	AY2020	TBD	2			2	
			Culture and Representation	*1	AY2020	TBD	2			2	
			Past and Present of Democracy	*1		I	2			2	
			International Society of Globalization Age	*1	AY2019	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 12 page 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	
			Special Lecture (Go in Japanese Culture)			III	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
Courses in Specialized Fields	Basic Specialized Courses	Compulsory Elective Courses ①	Genetics I			III	2		2	24	
			Biochemistry I			III	2		2		
			Cell Biology I			III	2		2		
			Cell Biology II			III	2		2		
			Physiology and Anatomy I			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		
			Physiology and Developmental Biology			IV	2		2		
			Biochemistry II			IV	2		2		
			Inorganic Chemistry I			IV	2		2		
			Genetics III			V	2		2		
			Biochemistry III			V	2		2		
			Cell Biology III			V	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	24	4
	Specialized Course	Compulsory Courses ③	Bioscience Laboratory I			IV	8	8			42
			Bioscience Laboratory II			V	8	8			
			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	18
			Organic Chemistry II			IV	2			2	
			Biophysics			IV	2			2	
Physiology and Anatomy II					V	2			2		
Organic Chemistry III					V	2			2		
Computational Chemistry					V	2			2		
Chemical Physics					V	2			2		
Plant Physiology					VI	2			2		
Biochemistry IV					VI	2			2		
Cell Biology IV					VI	2			2		
Microbiology					VI	2			2		
Bioorganic Chemistry					VI	2			2		
Organic Chemistry IV					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				
Partial Sum							42	0	18	60	
Sum for Courses in Specialized Fields								42	24	22	88
Total Sum								60	24	48.5	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 24 course credits must be acquired from Compulsory Elective Basic Specialized Courses ①.		
(3) Elective courses: A total of at least 22 course credits must be acquired from Elective Courses ② and ④, consisting of a total of at least-18 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 Required Number of Credits	Students unable to advance to the next year
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. Remain in the first year. 2. Must take no longer than 5 years to complete their first year. [Duration of enrollment (8 years)] minus [second to forth years(3 years)] 3. Students unable to advance to the next year within the 5-year limit stated in 2. above will be expelled from the school.