Course List and Graduation Requirements for International Programs, Physics Program - School of Science (for Undergraduates Enrolled in October 2023)

Course Category			Course	Term	Credits				
					No of Credits	Compulsory	Compulsory Elective	Elective	Minimum Requirement
Liberal Arts and Sciences Courses	Common Basic Courses	Introduction to skills for academic success	Introduction to skills for academic success	Ⅰ	1	1			1
		First Year Seminar	First Year Seminar	Ⅰ	2	2			2
		Language and Culture	Japanese	Fall,Spring	8	8			8
			Japanese/Second Foreign Languages/English	Fall,Spring	6	6			6
		Health and Sports Science	Health and Sports Science: Lecture	Ⅰ	2	2			2
			Exercise and Sports A	Ⅰ	1	1			2
			Exercise and Sports B	Ⅱ	1	1			
		Data Science	Introduction to Data Science (Lecture)	Ⅱ	1	1			1
			Data Science Exercise B	Ⅱ	1	1			1
		Partial Sum				*23*			*23*
	Liberal Arts Course	Contemporary Liberal Arts: Humanities and Social sciences	Introduction to Cultural Studies ★	Spring	2			2	4 consisting of 2 credits from CLA.
			Introduction to Political Studies ★	Ⅲ	2			2	
			Introduction to Economics ★	Spring	2			2	
		Contemporary Liberal Arts: Interdisciplinary/Integration of arts and sciences	Introduction to Career Development Theory	Fall	2			2	
			Art and Culture ★	Spring	2			2	
			Gender Studies	Ⅲ	2			2	
			Disaster Prevention and Mitigation	Ⅲ	2			2	
			Biotechnology	Ⅲ	2			2	
		Global Liberal Arts	International Development	Ⅳ	2			2	
			International Society in the Age of Globalization★	Fall	2			2	
			International Studies	Ⅳ	2			2	
			Exploration of Japan: From the Outside looking Inside	Spring	2			2	
			Go in Japanese Culture	Fall	2			2	
			Studium Generale A	Fall	2			2	
			Studium Generale B	Spring	2			2	
			Introduction to Intercultural Competence	Fall	2			2	
			Immigration in Japan	Ⅳ	2			2	
			Content courses taught in Japanese	–	–			–	
		Problem/Project Based Learning Seminar	Summer Camp for General Academic Skills	Ⅵ	2			2	
	Basic Courses in Natural Sciences		Calculus Ⅰ	Ⅰ	2		2		6
			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			6
			Fundamentals of Physics Ⅱ	Ⅱ	2	2			
			Fundamentals of Physics Ⅲ	Ⅱ	2	2			
			Fundamentals of Chemistry Ⅰ	Ⅰ	2			2	6
			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	2		2		2
			Laboratory in Chemistry	Ⅱ	2		2		
			Laboratory in Biology	Ⅱ	2		2		
Sum for Liberal Arts and Sciences Courses						**29**	**8**	**10**	**47**
Courses in Specialized Fields	Basic Specialized Course	Compulsory Courses ①	Fundamental Physics Tutorial Ia	Ⅰ	1	1			22.5
			Fundamental Physics Tutorial Ib	Ⅱ	1	1			
			Mathematical Physics Ⅰ	Ⅲ	2	2			
			Mathematical Physics Ⅱ	Ⅲ	2	2			
			Mathematical Physics Tutorial Ⅰ	Ⅲ	1	1			
			Mathematical Physics Tutorial Ⅱ	Ⅲ	1	1			
			Analytical Mechanics Ⅰ	Ⅲ	2	2			
			Statistical Physics Ⅰ (Thermodynamics)	Ⅲ	2	2			
			Physics Tutorial Ia	Ⅲ	0.5	0.5			
			Physics Tutorial Ib	Ⅲ	0.5	0.5			
			Electricity and Magnetism	Ⅳ	2	2			
			Quantum Mechanics Ⅰ	Ⅳ	2	2			
			Analytical Mechanics Ⅱ	Ⅳ	2	2			
			Physics Tutorial IIa	Ⅳ	1	1			
			Physics Tutorial IIb	Ⅳ	1	1			
			Physics Tutorial IIc	Ⅳ	1.5	1.5			
			Partial Sum			*22.5*	*0*	*0*	*22.5*
		Elective Courses ②	Mathematics Tutorial Ia	Ⅰ	1			1	[23]
			Mathematics Tutorial Ib	Ⅰ	1			1	
			Mathematics Tutorial IIa	Ⅱ	1			1	
			Mathematics Tutorial IIb	Ⅱ	1			1	
			Fundamental Physics Tutorial II	Ⅱ	1			1	
		Elective Courses ③	Physical Chemistry Ⅰ	Ⅲ	2			2	(~8)
			Earth and Planetary Science	Ⅴ	2			2	
			Sum			*22.5*	*0*	*[5]*	*[27.5]*
	Specialized Courses	Compulsory Courses ④	Quantum Mechanics Ⅱ	Ⅴ	2	2			14
			Statistical Physics Ⅱ	Ⅴ	2	2			
			Physics Tutorial IIIa	Ⅴ	1	1			
			Physics Tutorial IIIb	Ⅴ	1	1			
			Physics Laboratory Ⅰ	Ⅴ	4	4			
			Physics Laboratory Ⅱ	Ⅵ	4	4			
		Compulsory Elective Courses ⑤	Physics Seminar Ⅰ		4		4		24
			Physics Seminar Ⅱ		4		4		
			Physics Seminar Ⅲ		4		4		
			Physics Seminar Ⅳ		4		4		
			Physics Seminar Ⅴ		4		4		
			Physics Seminar Ⅵ		4		4		
			Graduation Research-Theoretical studies	Ⅶ, Ⅷ	16		16		
			Graduation Research-Experiments	Ⅶ, Ⅷ	20		20		
		Elective Courses ⑥	Biophysics	Ⅳ	2			2	[23]
			Astrophysics	Ⅳ	2			2	
			Condensed Matter Physics Ⅰ	Ⅴ	2			2	
			Particle Physics	Ⅴ	2			2	
			Chemical Physics	Ⅴ	2			2	
			Statistical Physics Ⅲ	Ⅵ	2			2	
			Physics Tutorial IVa	Ⅵ	0.5			0.5	
			Physics Tutorial IVb	Ⅵ	0.5			0.5	
			Quantum Mechanics Ⅲ	Ⅵ	2			2	
			Condensed Matter Physics Ⅱ	Ⅵ	2			2	
			Condensed Matter Physics Ⅲ	Ⅶ	2			2	
		Elective Courses ⑦	Computer Software Ⅰ	Ⅰ	2			2	(~8)
			Computer Software Ⅱ	Ⅳ	2			2	
			Fluid Mechanics and Tutorial	Ⅳ	2.5			2.5	
			Computational Chemistry	Ⅴ	2			2	
			Scientific Measurements	Ⅴ	2			2	
		Sum				*14*	*24*	*[23]*	*[61]*
Sum for Courses in Specialized Fields						**36.5**	**24**	**23**	**83.5**
Total Sum						**65.5**	**32**	**33**	**130.5**

・Confirm the prerequisite for each subject with the syllabus.

★Some of the courses on this column are offered in every other year. Confirm the offering term with the "Liberal Arts and Sciences Class Timetable" of the said year.

Graduation Requirements for International Programs, Physics Program - School of Science (for Undergraduate)

1. Liberal Arts and Sciences Courses: A combined total of at least 47 credits must be acquired.

(1) Common Basic Courses:
A total of at least 23 credits must be acquired, consisting of 1 credit of Introduction to skills for academic success, 2 credits of First year seminar, 14 credits from Language and Culture *, at least 2 credits each of Lecture and Exercise for Health and Sports Science, and 1 credit each of Lecture and Exercise for Data Science.

(2) Liberal arts Contemporary:
A total of at least 4 elective course credits must be acquired, consisting of at least 2 credits from Humanities and Social sciences or Interdisciplinary/Integration of arts and sciences.

(3) Basic Courses in Natural Sciences:
A total of at least 20 course credits must be acquired, consisting of these course credits;
6 compulsory course credits of Fundamentals of Physics I, II and III
At least 6 compulsory elective course credits from five Fundamental Mathematics courses
At least 2 compulsory elective course credits from three Laboratory courses
At least 6 elective course credits from the other six courses of Basic Courses in Natural Sciences, i.e. ・・・・・

2. Courses in Specialized Fields: A combined total of at least 83.5 course credits must be acquired from these course categories.

(1) Compulsory Courses:
A total of at least 14 course credits must be acquired from Compulsory Specialized Courses ④, and that of at least 22.5 course credits must be acquired from Basic Specialized Courses ①.

(2) Compulsory Elective Courses:
A total of at least 24 course credits must be acquired from Compulsory Elective Courses ⑤.

(3) Elective Courses:
A total of at least 23 course credits must be acquired from Elective Courses ② and ⑥. However a total of at most 8 elective course credits from Elective Courses ③ and ⑦ may be included in the total number of 23 elective course credits.

Requirements for Advancement for International Programs, Physics 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.