

2023 Admission
 Master's Program at Graduate School of Science and Engineering (Natural Science)

Category	Subcategory	Subject	Credits		Student Year	Semester		Required Credits	Note
			Compulsory	Elective		Spring	Fall		
Common Subjects at the Master Program		Advanced Research Ethics	1		1		○	7	Intensive
		English in Science and Technology	1		1 / 2		○		Intensive
		Academic Presentation	1		1 / 2		○		Intensive
		Master Research 1	2		1		○		
		Master Research 2	2		2		○		
Common Subjects of Natural Science		Basics for Management of Chemicals		1	1 / 2		○	12 or more	Intensive
		Safety and Health for Scientific Experiments and Fieldworks		1	1 / 2		○		Intensive
		Advanced Data Science		1	1 / 2		○		
		Advanced Seminar on SDGs		1	1 / 2		○		
		Intellectual Property		1	1 / 2		○		
		Advanced Seminar A		3	1		○		Intensive
		Advanced Seminar B		3	1		○		Intensive
		Advanced Seminar C		3	2		○		Intensive
		Advanced Seminar D		3	2		○		Intensive
		International Academic Seminar		1	1 / 2		○		*1
		Off-campus Training 1		1	1		○		*2
		Off-campus Training 2		1	2		○		*2
		Internship		1	1 / 2		○	Intensive	
Specialized Subject	P h y s i c s	Advanced Quantum Mechanics		2	1 / 2		○	<6 or more>	Every other year
		Advanced Condensed Matter Physics		2	1 / 2		○		Every other year
		Advanced Cosmology		2	1 / 2		○		Every other year
		Physics of Liquid Matter		2	1 / 2		○		Every other year
		Optical Physics		2	1 / 2		○		Every other year
		Advanced Statistical Physics		2	1 / 2		○		Every other year
		Galactic Astrophysics		2	1 / 2		○		Every other year
		Space Plasma Physics		2	1 / 2		○		Every other year
		High Energy Astrophysics		2	1 / 2		○		Every other year
		Advanced Topics on Radio Interferometers		2	1 / 2		○		Inter-Univ.
		Galactic Radio Astronomy		2	1 / 2		○		Inter-Univ.
		Advanced Theory of Astrophysics 1		2	1 / 2		○		Inter-Univ.
		Advanced Mechanics		2	1		○		
	Advanced Electromagnetism		2	1		○			
	Basic Study for Electromagnetic Waves		2	1		○			
	E a r t h S c i e n c e s	Advanced Geology A		2	1 / 2		○	<6 or more>	Every other year
		Advanced Geology B		2	1 / 2		○		Every other year
		Evolutionary Paleobiology A		2	1 / 2		○		Every other year
		Evolutionary Paleobiology B		2	1 / 2		○		Every other year
		Advanced Petrology and Mineralogy		2	1 / 2		○		
		Theoretical Mineral Physics A		2	1 / 2		○		Every other year
		Theoretical Mineral Physics B		2	1 / 2		○		Every other year
		Advanced Geophysics A		2	1 / 2		○		Every other year
		Advanced Geophysics B		2	1 / 2		○		Every other year
		Earth and Planetary Tectonics		2	1 / 2		○		
		Properties of Earth and Planetary Materials		2	1 / 2		○		
		Introduction to Atmospheric and Ocean Sciences		2	1 / 2		○		
		Ocean Dynamics		2	1 / 2		○		
		Global Environmental Changes		2	1 / 2		○		
		Advanced Practice on Earth Sciences A		2	1		○		
		Advanced Practice on Earth Sciences B		2	1		○		
	Advanced Practice on Earth Sciences C		2	2		○			
	Presentation Practice in a conference on Earth Sciences A		1	1		○			
	Presentation Practice in a conference on Earth Sciences B		1	2		○			
	C h e m i s t r y	Advanced Solid State Inorganic Chemistry A		1	1 / 2		○	<6 or more>	Every other year
		Advanced Solid State Inorganic Chemistry B		1	1 / 2		○		Every other year
		Advanced Quantum Chemistry A		1	1 / 2		○		Every other year
		Advanced Quantum Chemistry B		1	1 / 2		○		Every other year
		Chemical Kinetics and Dynamics		1	1 / 2		○		
Solid State Properties			2	1 / 2		○			
Advanced Chemistry of Electronic Properties			2	1 / 2		○	Every other year		
Advanced Bio-Analytical Chemistry A			1	1 / 2		○	Every other year		
Advanced Bio-Analytical Chemistry B			1	1 / 2		○	Every other year		
Advanced Organic Analytical Chemistry A			1	1 / 2		○	Intensive		
Advanced Organic Analytical Chemistry B			1	1 / 2		○	Intensive		
Advanced Organic Chemistry A			1	1 / 2		○	Every other year		
Advanced Organic Chemistry B			1	1 / 2		○	Every other year		
Advanced Organic Chemistry C			1	1 / 2		○	Every other year		
Advanced Organic Chemistry D			1	1 / 2		○	Every other year		
Bioenergetics			2	1 / 2		○	Every other year		
Advanced Nucleic Acid Chemistry			2	1 / 2		○	Every other year		
Advanced Biomolecular Science			2	1 / 2		○			
Quantitative Environmental Analytical Chemistry			2	1 / 2		○			
Environmental Behavior of Toxic Chemicals			2	1 / 2		○	Every other year		
B i o l o g y	Plant Cell Structure and Function		2	1 / 2		○	<6 or more>	Every other year	
	Functional Plant Physiology		2	1 / 2		○		Every other year	
	Mechanisms of Development		2	1 / 2		○		Every other year	
	Evolutionary Morphology		2	1 / 2		○		Every other year	
	Molecular and Functional Biology		2	1 / 2		○		Every other year	
	Aquatic Ecology		2	1 / 2		○		Every other year	
	Evolutionary Ecology		2	1 / 2		○		Every other year	
	Environmental Molecular Toxicology		2	1 / 2		○		Every other year	
	Aquatic Microbiology		2	1 / 2		○		Every other year	
	Bioinformatics		2	1 / 2		○		Every other year	
	Advanced Research in Biology A		2	1		○			
	Advanced Research in Biology B		2	2		○			

Degree: Master of Science
 Requirements for Completing the Master's Program (Natural Science)

1. Having acquired 30 credits or more including 7 compulsory credits of the common subjects at the master program, 12 credits or more credits from the natural science common subjects, and 6 credits or more from the specialized subjects in the studied field.
2. Having completed the master dissertation review and pass the final exam.