

10. Education

The Institute for Space–Earth Environmental Research (ISEE) primarily offers graduate programs in the Science, Engineering, and Environmental Studies schools of Nagoya University. The ISEE has its own graduate course for Heliospheric and Geospace Physics in the Division of Particle and Astrophysical Science of the Graduate School of Science. ISEE also cooperates with the Department of Electrical Engineering, through the Space Electromagnetic Environment group in the Graduate School of Engineering, and the Department of Earth and Environmental Sciences, through the Chronology and Natural History, and Global Water Cycle groups, in the Graduate School of Environmental Studies, by teaching / training graduate students in disciplines related to space–earth environmental research.

Our graduate students use various methodologies and techniques, including ground observation, fieldwork, laboratory experiments, radioactive dating, numerical simulations and modeling, and theoretical research. Their work includes the development of satellite, balloon, and aircraft instruments—and the analysis of observational data. As ISEE members conduct research that involves analyzing data captured by both domestic and international instrument platforms, and / or by collaborative research with foreign researchers, our students are actively pioneering new research fields, through their involvement with other scholars in international collaborations, and in interdisciplinary research. Their studies mature as MSc or PhD theses, which are presented at international workshops and conferences, and published in academic journals. We nurture researchers who can apply their knowledge to benefit society, who have a broad perspective, and who demonstrate an international perspective.

Staff association between the research divisions in the ISEE and the graduate schools

		Graduate School of Science					Graduate School of Engineering		Graduate School of Environmental Studies					
		Division of Particle and Astrophysical Science					Department of Electrical Engineering and Computer Science		Department of Earth and Environmental Sciences					
		Heliospheric and Geospace Physics					Electrical Engineering Course Space Electromagnetic Environment		Earth and Planetary Sciences Course Chronology and Natural History		Hydrospheric-Atmospheric Sciences Course Global Water Cycle			
		Atmospheric and Environmental Science (AM)	Space Science – Experiment (SSE)	Solar and Space Physics - Theory (ST)	Cosmic-Ray Physics (CR)	Heliospheric Plasma Physics (SW)	Space Observation	Information Engineering	Geochronology	Environmental History	Meteorology	Cloud and Precipitation Sciences	Atmospheric Chemistry	Hydroclimatology
Institute for Space–Earth Environmental Research	Integrated Studies			●			●							
	Cosmic-Ray Research				●									
	Heliospheric Research					●								
	Ionospheric and Magnetospheric Research		●				●							
	Meteorological and Atmospheric Research	●					●			●	●	●		
	Land–Ocean Ecosystem Research												●	●
	Chronological Research								●	●				
	Center for International Collaborative Research	●	●		●		●		●				●	
	Center for Intergrated Data Science			●	●		●		●		●	●		●
	Center for Orbital and Suborbital Observations	●	●		●						●	●	●	●

Number of Students Supervised by ISEE Staff

(April 1, 2019–March 31, 2020)

	M1	M2	D1	D2	D3	Undergraduate Students	Non-regular students	Total
Graduate School of Science	10	15	2	3	6	-	1 *1	37
Graduate School of Engineering	8	5	0	0	2	-	-	15
Graduate School of Environmental Studies	16	9	1	2	7	-	-	35
School of Science	-	-	-	-	-	7	-	7
School of Engineering	-	-	-	-	-	11	3*2	14
ISEE	-	-	-	-	-	-	2*2	2
Total	34	29	3	5	15	18	6	110

Cumulative total in FY 2019 *1 Special Research Student, *2 Research Student

Faculty Members

(April 1, 2019–March 31, 2020)

■ Graduate School of Science Division of Particle and Astrophysical Science

Field/Topics	Professor	Associate Professor	Lecturer	Assistant Professor
Solar-Terrestrial Environmental Science	Akira Mizuno	Tomoo Nagahama		
Solar-Terrestrial Interrelation Science	Masafumi Hirahara	Satonori Nozawa	Shin-ichiro Oyama	
		Yuichi Otsuka		
	Kanya Kusano	Satoshi Masuda		Akimasa Ieda
Solar-Terrestrial Physics	Yoshitaka Itow	Fumio Abe	Akira Okumura	Hiroaki Menjo
	Hiroyasu Tajima	Yutaka Matsubara		
		Fusa Miyake		
	Munetoshi Tokumaru	Kazumasa Iwai		Ken-ichi Fujiki

■ Graduate School of Engineering Department of Electrical Engineering and Computer Science

Field/Topics	Professor	Associate Professor	Lecturer	Assistant Professor
Space Electromagnetic Environment	Kazuo Shiokawa	Nozomu Nishitani		Taku Nakajima
		Masahito Nosé		
	Yoshizumi Miyoshi	Takayuki Umeda	Shinsuke Imada	

■ Graduate School of Environmental Studies Department of Earth and Environmental Sciences

Field/Topics	Professor	Associate Professor	Lecturer	Assistant Professor
Hydrospheric-Atmospheric Sciences Course Global Water Cycle	Kazuhisa Tsuboki	Taro Shinoda		
	Nobuhiro Takahashi	Hirohiko Masunaga		
	Michihiro Mochida			Sho Ohata
	Tetsuya Hiyama	Naoyuki Kurita	Hatsuki Fujinami	
	Joji Ishizaka	Hidenori Aiki		Yoshihisa Mino
Earth and Planetary Sciences Course Chronology and Natural History	Masayo Minami	Takenori Kato		
	Hiroyuki Kitagawa			Hiroataka Oda

Undergraduate Education

Based on demand, the faculty of the institute offers numerous undergraduate courses in the School of Science, the School of Engineering, and in other departments and at other universities in the adjacent area.

■ During the 2019 Academic Year, The Following Courses were Offered;

- Astrophysics and Space Science
- Astrophysics III
- Atmospheric and Hydrospheric Sciences
- Earth and Planetary Science Researches
- Electric Circuits with Exercise
- Electromagnetic Wave Engineering
- Environmental Earth Sciences (Geosphere Environmental Chemistry)
- Experimental Physics
- Experiments in Physics - Advanced Course
- First Year Seminar A
- Frontier of Earth and Planetary Sciences
- Fundamentals of Atmospheric and Hydrospheric Sciences
- Geochemical Analysis II and Experiments
- Geology Experiments
- Graduation Thesis A • B
- Introduction to Earth Science
- Introduction to Electrical/ Electronic and Information Engineering for Automobiles
- Introduction to Physics I, II
- Isotope Geochemistry
- Laboratory in Physics
- Mathematics 1 with Exercises A/B
- Petrology Experiments
- Physics Experiments I, II
- Probability Theory and Numerical Analysis with Exercises
- Remote sensing
- Science of Atmospheric-Hydrospheric Environment
- Solar System Science
- Technical Visits in Companies and Laboratories B
- Topics in Advanced Physics
- View of Advanced Electrical/ Electronic and Information Engineering