



Graduate School

Graduate School of Health Data Science

Master's Program

Doctoral Program

One of Juntendo's strengths is our ability to leverage the vast quantities of medical data we have amassed over decades in the fields of health, medical care, and sport, and deploy this data in research and education. Juntendo has already tapped into these resources with the establishment of the undergraduate-level Faculty of Health Data Science, as well as the Graduate School of Medicine's Data Science program. We are cultivating information scientists proficient in AI and data science, along with educators and researchers who can generate new insights from their research output, and disseminate and deploy them throughout society. At the Graduate School of Health Data Science, which opened in April 2025, we will adopt a holistic approach to health—not only within medical and clinical contexts but also in people's everyday lives and broader social activities. We will train highly skilled information specialists who take a scientific, evidence-based approach to utilizing digitalization and data analysis to solve complex challenges.



Graduate School of Health Data Science

Key features of the graduate school

The master's program will foster highly skilled specialists capable of leveraging knowledge in the realms of both health and data science. With an emphasis on statistics, which is the cornerstone of data science, we will equip students with the knowledge and skills required by IT and digital personnel in all kinds of fields, so that they can engage in advanced education and research. We will cultivate personnel armed with the knowledge that serves as the cornerstone of health and medical care, such as anatomy and physiology, who are also proficient in AI and data science. The education they receive will, for example, foster the ability to judge for themselves the accuracy of AI in health settings, where errors generated by AI cannot be allowed to pass undetected. The doctoral program delves deeper into data analytics, computer science, and health data science. By creatively applying these fields, students will become global leaders in advanced information science who can create new societal values, and educators and researchers capable of driving academic innovation.

Why study here? Prospects for the future

The spheres of activity open to health data scientists are almost unlimited

The health field is expected to evolve further in the societies of the future. As a highly skilled information specialist, you may use data science techniques to analyze health information in order to improve medical care or public health, or start a business in a new industrial field, such as developing AI-based SaMD health apps. Or you might also become a specialist in the cybersecurity field, capable of defending against the AI-driven cyberattacks that have become an increasing threat in recent years. The arenas where you can play a part are boundless. There are also opportunities for those who wish to be educators and researchers. Among the numerous initiatives already underway are a greater emphasis on the digital field in vocational training, efforts to develop digital human resources at higher education institutions and the like, and the promotion of recurrent education and reskilling for working people. This is driving a growing need to foster educators and researchers who can provide instruction to support these endeavors.

Master's Program

Subject Category	Subject Name	Year & Semester	
Basic subjects	Basics of Statistics	1 Spring	
	Introduction to Artificial Intelligence	1 Spring	
	Introduction to Biomechanics	1 Spring	
	Introduction to Health and Medicine for Data Scientists	1 Spring	
	Methodology of Academic English	1 Spring	
	Introduction to Information Security Management	1 Spring	
	Research Ethics (Including Engineering Ethics)	1 Spring	
Subtotal (7 subjects)			
Basic core compulsory courses	Advanced Statistics	1 Autumn	
	Advanced Biostatistics	1 Autumn	
	Advanced Artificial Intelligence	1 Autumn	
	Advanced Network Security	1 Autumn	
	Advanced Medical Informatics	1 Autumn	
	Advanced Medical DX and AI	1 Autumn	
Subtotal (6 subjects)			
Core elective courses	Data analytics and computer science research area subjects	Population Health Science	1 Spring
		Advanced Multivariate Statistical Analysis	1 Autumn
		Advanced Data Science of Genes and Diversity	1 Autumn
		Advanced Epidemiology	2 Spring
		Advanced Applied Mathematics	1 Spring
		Advanced Computational Science	1 Spring
		Advanced Information Visualization	2 Spring
		Advanced Distributed Big Data Processing	2 Spring
		Advanced High-Performance Big Data Processing	2 Autumn
	Health data science research area subjects	Advanced IoT Security Measures	2 Spring
		Advanced Cybersecurity	2 Autumn
		Advanced Health and Medicine for Data Scientists	1 Autumn
		Advanced Biomechanics	1 Autumn
		Advanced Clinical Ethics and Data Science	1 Spring
		Advanced Clinical Medical Decision-Making	2 Spring
		Advanced Data Science for Health Economics and Policy	1 Spring
		Advanced Image Analysis and AI	1 Autumn
		Practical Training in Medical DX and AI	2 Spring
Subtotal (18 subjects)			
Research training subjects	Special Research in Health Data Science I	1 Both	
	Special Research in Health Data Science II	2 Both	
	Subtotal (2 subjects)		
Total (33 subjects)			
Degree	Master of Health Data Science		

Doctoral Program

Subject Category	Subject Name	Year & Semester
Basic subjects	Advanced Topics in Statistics	1 Spring
	Seminar in Artificial Intelligence	1 Spring
	Seminar in Health and Medical Informatics	1 Spring
	Subtotal (3 subjects)	
Advanced specialized subjects	Advanced Topics in Data Analytics I	1 Spring
	Advanced Topics in Data Analytics II	1 Autumn
	Advanced Practical in Data Analytics I	2 Spring
	Advanced Practical in Data Analytics II	2 Autumn
	Seminar in Computer Science I	1 Spring
	Seminar in Computer Science II	1 Autumn
	Advanced Practical in Computer Science I	2 Spring
	Advanced Practical in Computer Science II	2 Autumn
	Seminar in Health Data Science I	1 Spring
	Seminar in Health Data Science II	1 Autumn
	Advanced Practical in Health Data Science I	2 Spring
	Advanced Practical in Health Data Science II	2 Autumn
	Subtotal (12 subjects)	
Research training subjects	Special Research in Health Data Science I	1 Both
	Special Research in Health Data Science II	2 Both
	Special Research in Health Data Science III	3 Both
	Subtotal (3 subjects)	
Total (18 subjects)		
Degree	Doctor of Health Data Science	