[For students applying for the course after the 2023 academic year]

▣ Graduation credits: At least 18 credits in total: At least 18 credits in total

※ As with the current minor, duplicate recognition of majors and humanities electives is not allowed.

※ Recommended prerequisite courses (not included in 18 credits): 4 courses in total

- MAS110(Linear Algebra for Data Science), MAS109(Introduction to Linear Algebra), MAS250(Probability and Statistics), IE241 (Engineering Statistics I)

▣ Major: At least 18 credits in total

○ **Major required: 6 credits**

※ The compulsory major courses are divided into two areas, and you must take 3 credits for each area.

1) Basic Computer Course for AI 2) Basic Machine Learning Course

※ CS206 is compulsory for the major for computer science students, and IE260 is required for the major for industrial and system engineering students.

• [Area 1] Basic computer courses for AI (3 credits): 1 of these courses is required

Subject No.	Name of the Subject	Note
CS206	Data Structure	Computer Science
IE260	Data Structure and Analysis	Industrial & Systems Engineering
EE205	Data Structures and Algorithms for Electrical Engineering	Electrical Engineering

• [Area 2] Basic machine learning courses (3 credits): 1 of these courses is required

Subject No.	Name of the Subject	Note
CS376	Machine Learning	Computer Science
EE331	Introduction to Machine Learning	Electrical Engineering
IE343	Statistical Machine Learning	Industrial & Systems Engineering
MAS473	Introduction to Artificial Intelligence with Mathematics	Mathematical Sciences

○ **Elective major: 12 credits**

※ For elective major, a total of 12 credits, including designated electives (6 credits) and elective courses (6 credits)

※ In the case of designated electives, you must take 2 courses (6 credits) in different areas.

Classific-ation	Area	Subject No	Name of the Subject
Designa t-ed	Natural Language	CS372	Natural Language Processing with Python

electives	Processing	CS475	Machine Learning for Natural Language Processing
		CS474	Text Mining
	Computer Vision	CS484	Introduction to Computer Vision
		ME459	Introduction to Visual Intelligence
	Robotics	CS270	Intelligent robot design and programming
		EE478	Introduction to Multi-disciplinary Robotics
		CS492	Special Topics in Computer Science <Introduction to Intelligent Robotics>
	Deep Machine Learning	ME491	Special Topics in Mechanical Engineering <Learning-based control>
		IE437	Data-Driven Decision Making and Control
		CS411	System for Artificial Intelligence
		CS423	Probabilistic Programming
		CS470	Introduction to Artificial Intelligence
		CS570	Artificial Intelligence and Machine Learning
		IE540	Dynamic Programming and Reinforcement Learning
		IE579	Game Theory and Multi-Agent Reinforcement Learning
		EE488	Special Topics in Electrical Engineering <Hardware acceleration for machine learning>
	Data Science	EE412	Foundation of Big Data Analytics
		AI506	Data Mining and Search
		IE261	Introduction to Data Science for IE
		CS361	Introduction to Data Science
	AI in Society	CS575	AI Ethics
		HSS130	Science, Technology and Society
		HSS405	Logic and Artificial Intelligence
		HSS210	Language, Mind and Brain
		EE485	Special Topics in Electronic Engineering I<Philosophical issues in AI>
elective courses	X+AI	ME453	Introduction to Robotics Engineering
		MAS374	Optimization Theory
		MAS456	Statistical Methods with Computer
		IE471	Artificial Intelligence for Finance
		EE476	Audio-Visual Perception Model
		EE481	Intelligent Systems
		EE488	Special Topics in Electrical Engineering <Introduction to Computer Vision>
		EE469	Brains, Machines, and Societies

		EE474	Introduction to Multimedia
		IE331	Operations Research: Optimization
		EE488	Special Topics in Electrical Engineering <AI ConvergenceCapston Design>
		CS454	Artificial Intelligence Based Software Engineering
		CBE464	Big Data Analysis and Machine Learning for Biotechnology
		PH413	Computational Physics
		CH453	AI Chemistry
	AI basics	CoE202	Basics of Artificial Intelligence
		EE214	Machine Learning Basics and Practices

☐ Transitional measures

- The above requirements apply from the spring semester of 2023 and apply to all current students regardless of the year of admission.
- Courses that used to be special lectures but have been changed to regular courses can be recognized only for the subtitles.
  - CS492 Special Topics in Computer Science <Introduction to Data Science>
  - EE488 Special Topics in Electrical Engineering<Brains, Machines, and Societies>
  - CBE481 Special Topics in Chemical and Biomolecular Engineering <Big Data Analysis and Machine Learning for Biotechnology>