

Course Requirements

Program	Course				Research	Total
	General	Mandatory Major	Elective			
			Elective Major	Elective		
M.S.	3 & 1AU	3	9	6	no more than 12	33
Ph.D.	3 & 1AU	3	15	9	30	60

- It is possible to combine curriculum credits accumulated during Master's Program for the Doctorate Program.
- Need to complete requirements set by individual department as well as this Course Major's requirements.

□ Master's Program

- 1) Graduation Credits: at least 33 credits
- 2) Mandatory General Course: 3 credits and 1AU
 - Should select 1 course among CC500 Scientific Writing, CC510 Introduction to Computer Application, CC511 Probability and Statistics, CC512 Introduction to Materials Science and Engineering, CC513 Engineering Economy and Cost Analysis, CC522 Introduction to Instruments, CC530 Entrepreneurship and Business Strategies, and CC531 Patent Analysis and Invention Disclosure, CC532 Collaborative System Design and Engineering
 - CC010 Special Lecture on Leadership (applied since 2002 except for industry supported scholarship & foreign students)
 - CC020 Ethics and Safety I (1AU) (all students must complete the course to graduate during the master's course or the doctor's course one time)
- 3) Mandatory Major Course: 3 credits.
 - EML501 Introduction to e-Manufacturing
- 4) Elective Courses: 15 credits.
 - Should include 9 credits out of the major electives listed in the Curriculum List of the eML. Program under the following conditions:
 - Should take at least one among MAE547 Knowledge-Based Design System, IE551 Manufacturing System and Supply Chain, CS550 Software Engineering, and EML601 e-Manufacturing Practice.
 - Students in the Department of Industrial & Systems Engineering should take EML601 e-Manufacturing Practice.
- 5) Research: At most 12 credits
 - Can be substituted by the research credits of the enrolled department.
 - 3 credits of this research course can be earned by the internship program in a company. (recommended)

□ Doctorate Program

- 1) Graduation Credits: at least 60 credits
- 2) Mandatory General Course: 3 credits and 1AU
 - It is possible to combine the curriculum credits accumulated during Master's Program for Doctorate Program.
- 3) Mandatory Major Course: EML501 Introduction to e-Manufacturing
- 4) Electives: 24 credits
 - Should include 15 credits out of the major electives listed in the Curriculum List of the eML Program under the following conditions:
 - Should take at least one among MAE547 Knowledge-Based Design System, IE551 Manufacturing System and Supply Chain, CS550 Software Engineering, and EML601 e-Manufacturing Practice.

- Students at Department of Industrial & Systems Engineering should take EML601 e-Manufacturing Practice.
- 5) Research: At least 30 credits
- Can be substituted by the research credits of the enrolled department.