Course Requirements

Program	Course				Research	Total
	General	Mandatory Major	Elective			
			Elective Major	Elective		
M.S.	3	3	9	9	no more than 12	36
Ph.D.	3	3	15	21	30	72

- 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 36 credits

    2) General Course: 3 credits

        - Should select 1 course among **CC500 Science Writing in English**, **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**, and **CC530 Entrepreneurship and Business Strategies**.

    3) Mandatory Major Course: 3 credits.

        - *EML501 Introduction to e-Manufacturing*

    4) Elective Courses: 18 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 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 72 credits

    2) General Course: 3 credits

        - 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: 36 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 Engineering should take *EML601 e-Manufacturing Practice*.

    5) Research: At least 30 credits

        - Can be substituted by the research credits of the enrolled department.